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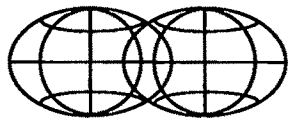
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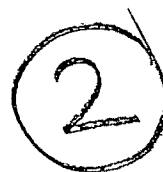
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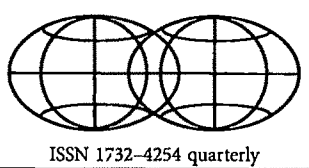
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Rural areas in Poland from a demographic perspective

Jadwiga Biegańska

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Abstract. The article presents an analysis and a critical assessment of rural areas in Poland in the years 1999–2011 from a demographic perspective. The analysis is based on indicators characterising population density, population structure by gender and age, migrations of population, and vital statistics. In order to classify and compare rural areas, the k-means method is employed. The sample of rural areas used in the study contains all 2,173 rural and urban-rural gminas (excluding urban parts) in Poland.

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1. Introduction

Demographic characteristics are considered today one of the major benchmarks enabling meaningful analyses and predictions of socio-economic developments to be

performed. The thorough knowledge of demographic processes and structures allows socio-economic policies to be developed at the national, regional and local levels. Like social structures, also demographic structures have effect on the quality of human resources.

In this article, rural areas in Poland are analysed and critically assessed with respect to changes in their demographic structures and processes that occurred between 1999 (when for the first time in Poland's post-war history the numbers of rural population showed a steady upward trend) and 2011.

2. Research materials and methods

The analysis below is based on data derived from the Local Data Bank of the Central Statistical Office (GUS) and the *Population Projection for Poland 2008–2035*, as well as long-term GUS data on all Poland and its rural areas from the years 1946–2010. To ensure data consistency and to avoid conclusions being drawn based on a single year, the mean values of the data were calculated for years 1999–2004 and 2005–2011. The sample of rural gminas taken for analysis included all 2,173 rural and urban-rural gminas (excluding urban parts), totalling 2,173 units (as of 2011) (1).

The indicators used in the course of research were the following: population density (people per sq. km), the dynamics of the number of population (years 2005–2011 in relation to 1999–2004, %), a feminisation rate in the age group 20–34 years, a percentage of the pre-working age population (%), a percentage of the working-age population (%), a percentage of the post-working-age population (%), an ageing index, a parent support ratio, the intensity of population ageing, a birth rate (‰), a general fertility rate, a death rate (‰), natural increase (‰), a rate of demographic dynamics, a rate of migration inflow (‰), a rate of migration outflow (‰), a total migration rate (‰), the index of migration effectiveness. To enable the comparison of Polish rural areas with respect to their specific demographic structures and processes, the areas were classified using the k-means method.

3. Dynamics of the number and density of population

Following 1999, the number of population in rural areas in Poland started rising dynamically and steadily. Earlier on, before 1998, the balance of mi-

gration in rural areas had always been negative (due to excess outflows to urban areas). Between 1999 and 2011, rural population increased by almost one million people (6.5%) and its present estimate stands at 15.5 million (cf. Szymańska, Biegańska, 2010). This upward trend is related to a positive balance of migration and a natural increase that is still positive (Szymańska, Biegańska, 2011b). The same trend caused that rural population's share in the total population of the country increased from 38% in 1999 to over 39% in 2011 and it is predicted to reach 41% in 2035 (Population Projection).

The positive balance of migration and positive natural increase in rural areas are reflected in the dynamics of population structure and number, and in the building-up process of suburbanisation. The highest dynamics of population growth is observed in the peri-urban areas of large cities (Fig. 1). This trend is positive, because the arriving population (mainly urban) consists of young and well-educated people who stimulate local socio-economic processes, entrepreneurship and creativity, and contribute to better availability of infrastructure and utilities. As a result, multifunctional rural areas are formed in the zones surrounding large cities (Szymańska, Biegańska, 2011b). In the rural, typically farming areas situated far from large cities, the dynamics of the number of population is insignificant (Fig. 1). In eastern Poland, the main source of this phenomenon is outflows of people who seek education and employment opportunities in the services sector in towns and cities. Overall, two trends are marked: outflows of urban population to rural areas and inflows of rural residents to urban areas.

As regards population density, the factors that determine it include the dynamics of the number of population (reflecting the contemporary demographic processes), the characteristics of the natural environment and historical past. In the period in question, population density in rural areas in Poland was around 51 people, but the share of rural gminas where the rate was high (100–200 people per km²) and very high (>200 people per km²) was increasing. Compared with the years 1999–2004 when the share was 14.5%, in the period 2005–2011 it was already 15.8% (Table 1). Generally, the most densely populated rural areas in Poland are found in the southern part of the country and in the peri-urban zones of large cities (Fig. 2) (cf. Szymańska, Biegańska, 2012).

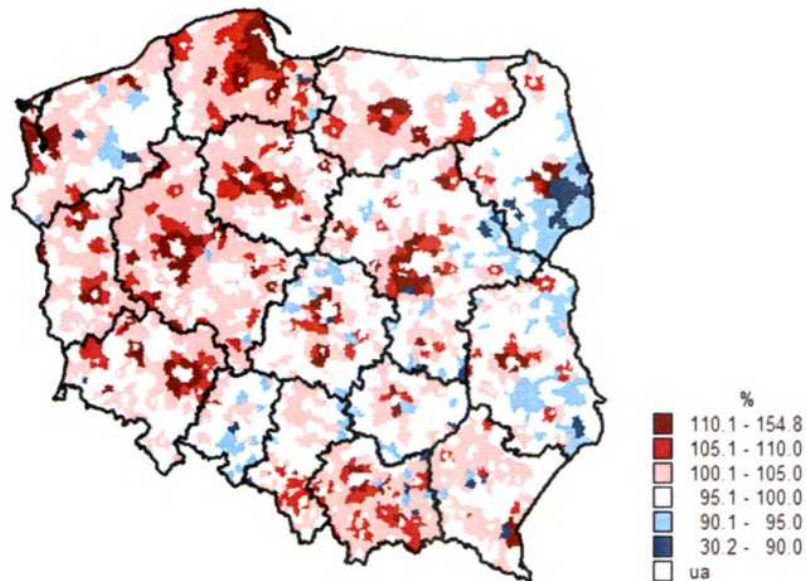


Fig. 1. Dynamics of population number in rural areas in Poland (years 2005–2011 in relation to years 1999–2004; 1999–2004 as 100%)

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

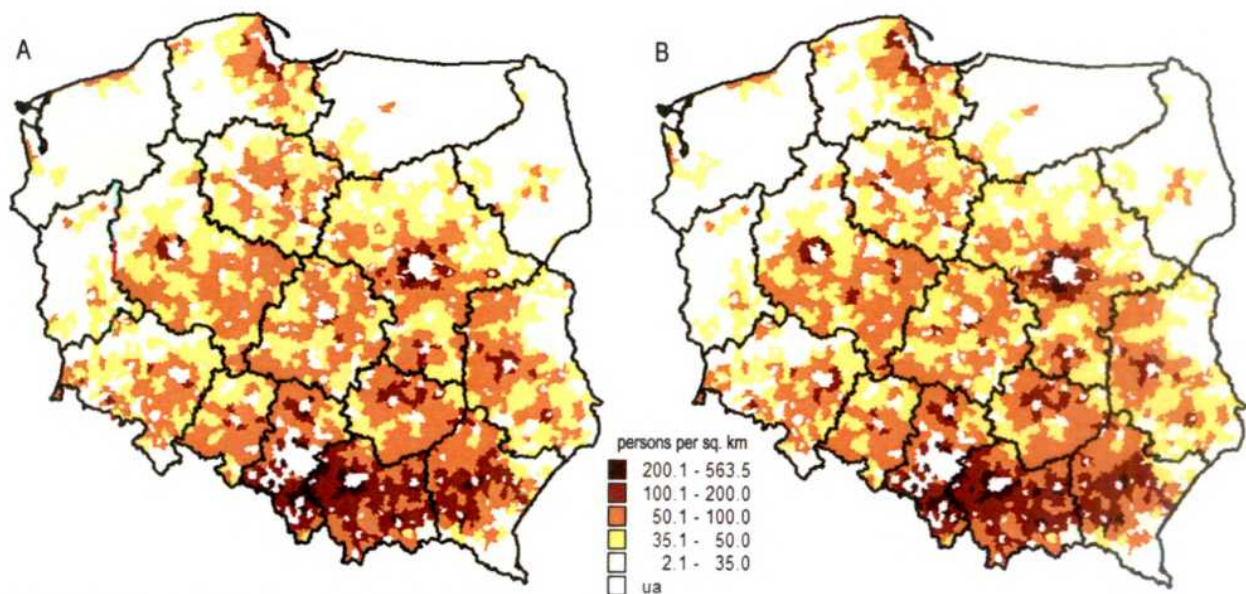


Fig. 2. Population density in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

4. Population structure by gender and age

Another demographic characteristic investigated in this article is changes in the gender and age structure of populations living in rural areas in Poland.

The most common measure applied to assess the structure of population is a ratio of the number of women to the number of men (a feminisation rate) or the number of men to the number of women (a masculinisation rate). An appropriate proportion between the two rates is important for procreation.

The ratio between women and men living rural areas in the analysed period was 101:100. This relation was advantageous and showed that the population was balanced in gender terms. However, in the age group 20–34 years considered the matrimonial age group the ratio was much less favourable – 97:100. The deficit of women in some gminas was particularly noticeable. In 33% of rural gminas in Po-

land there were less than 90 women at matrimonial age per 100 men, and in almost 3% even less than 80 (Table 1, Fig. 3). Spatially, a deficit of women at matrimonial age in rural areas mainly occurs in eastern Poland. As a result, males have less opportunity to find a spouse, the rate of marriages decreases, likewise the number of births (cf. Fig. 10). All these phenomena advance population ageing (cf. Fig. 7–9).

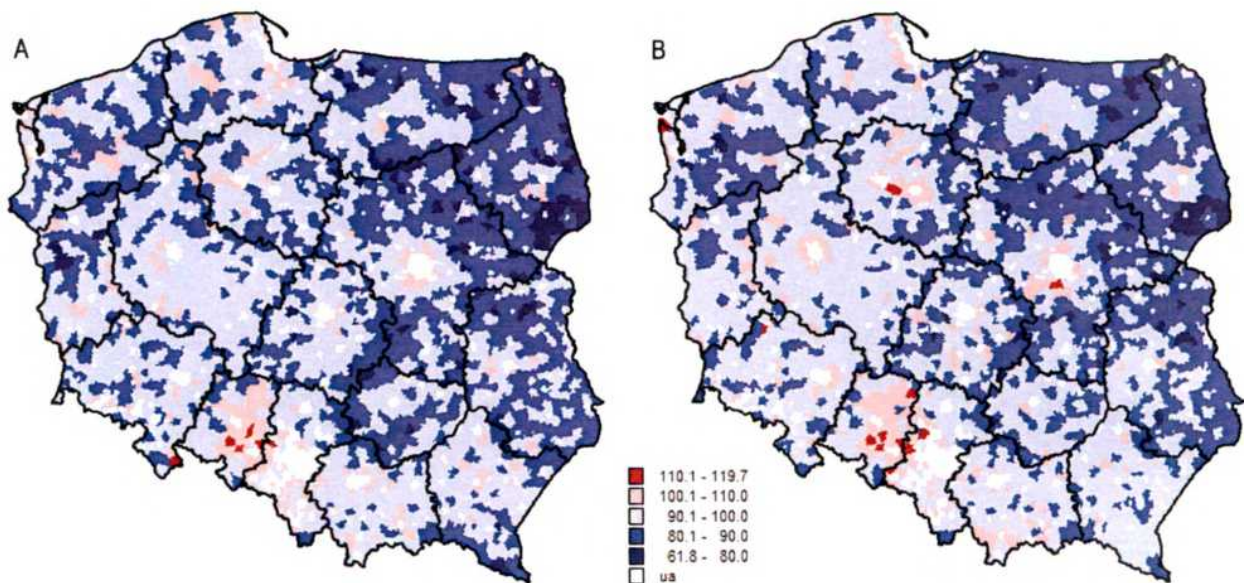


Fig. 3. Feminisation rate at age 20–34 years in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

The appropriate age structure of population is an important factor in socio-economic development. The age structure also indicates which areas are demographically young and old. In this article, the age structure of population in rural areas is analysed according to three economic age groups, i.e. the pre-working age population (0–14 years), the working-age population (women 15–59 years, men 15–64 years) and the post-working age population (women 60 years and older, men 65 years and older). The working-age population is the actual labour force of the country and the pre-working age population will become one in the future. Depending on its share, it shows whether an area is demographically young or old.

The share of the pre-working age population in rural areas in Poland was decreasing very fast. In the 1950s and 1960s, it exceeded 30%; in the decades of the 1970s, 1980s, and 1990s, it ranged from 20 to 30%; in the period 2005–2011 it dropped to only 18%. The reason was a generally falling number of births, also in rural areas. The shares of the pre-working age population in rural areas show a declining percentage of gminas where they were the highest, in excess 20%. Between 1999–2004 and 2005–2011 the percentage fell from 69.0% to only 9.3% (Table 1). Relatively high rates of the pre-working age population are typical of rural areas in northern and south-eastern Poland (Fig. 4), where populations invariably have more pronatalist attitudes (cf. Fig. 11).

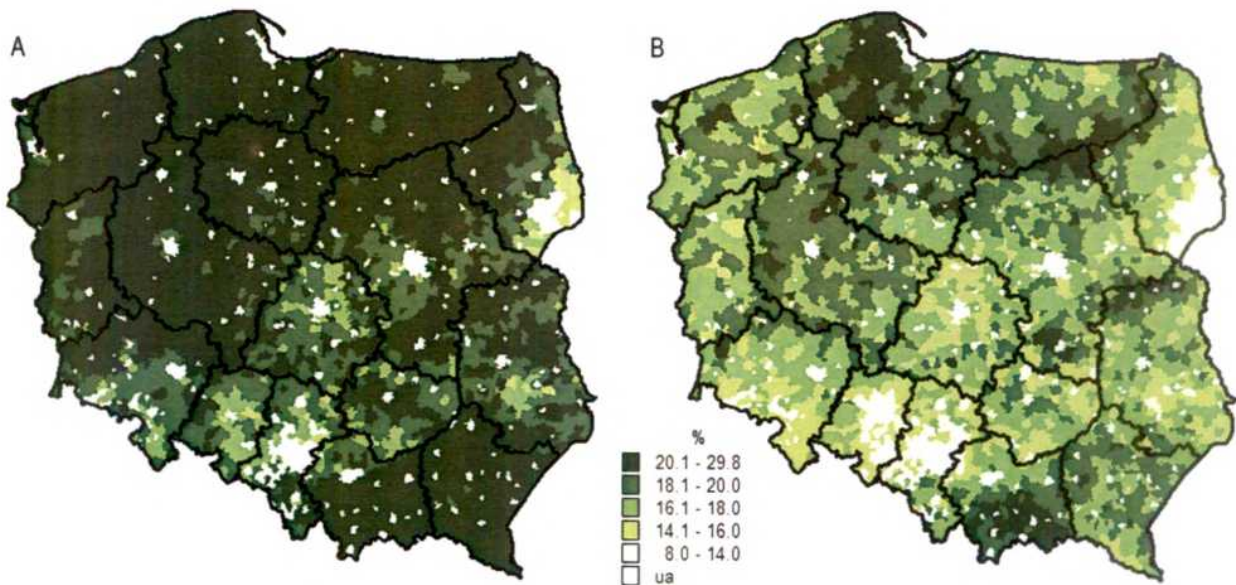


Fig. 4. Share of pre-working age population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

In contrast, the share of the working-age population increased in rural areas. In the years 1999–2004, the population accounted for 63% on average, but in the next period, 2005–2011, it was almost 67%. One of the reasons was a new wave of baby-boomers enter-

ing this age group. The working-age people are usually economically active, so their greatest shares are found in economically attractive rural areas where labour markets are rich and diverse, e.g. in urbanised areas and in the rural parts of peri-urban areas (Fig. 5).

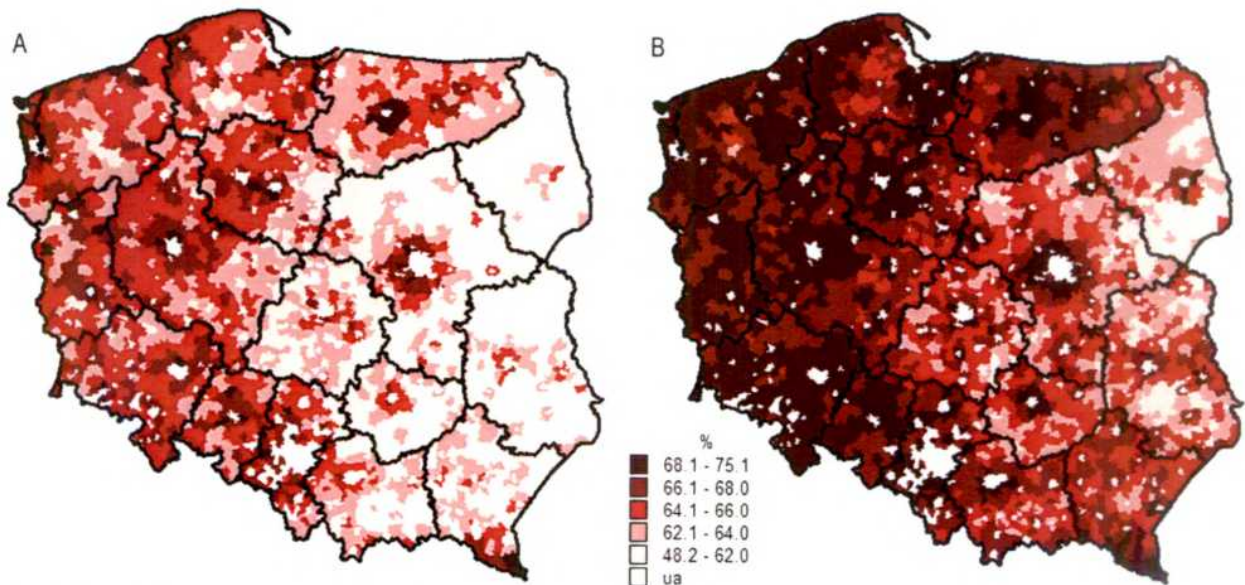


Fig. 5. Share of working age population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

The third age group, i.e. people at retirement age, stood at an average of 15.5% throughout the analysed period. However, the percentage of rural gminas where the rate was the highest (21%) dropped

from 9.0% in 1999–2004 to 7.1% in 2005–2011 (Table 1). Spatially, a high share of the post-working age population was typical for several decades of rural areas in eastern Poland (Fig. 6).

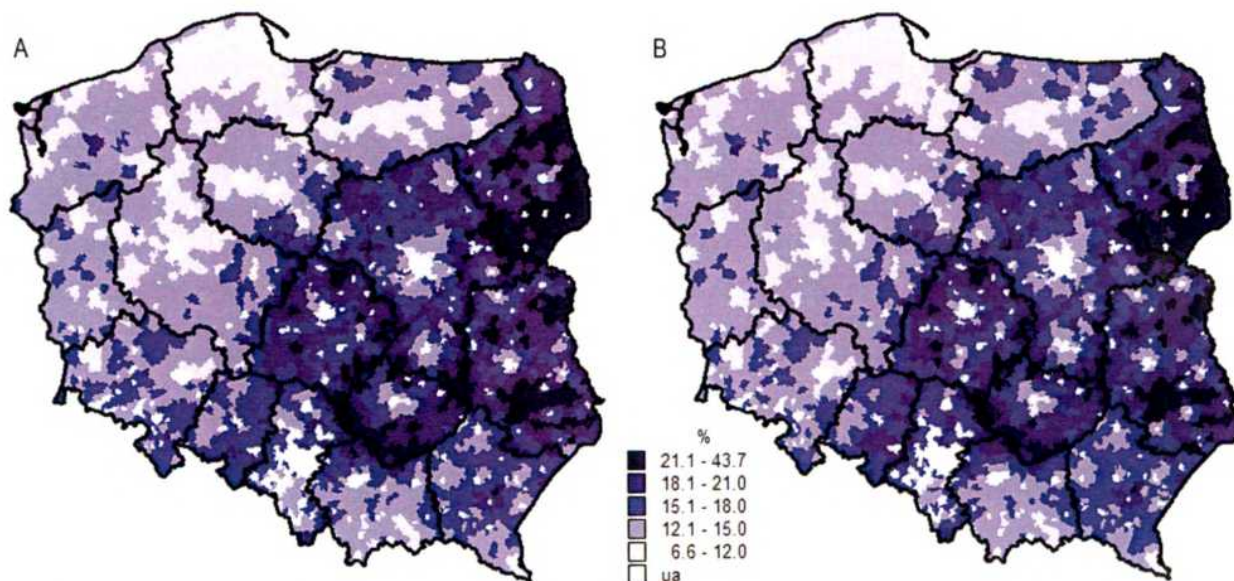


Fig. 6. Share of post-working age population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

As far as population age is concerned, there is a range of indicators that enable accurate assessments of the level of demographic ageing and the pace of population ageing.

An analysis of rural areas in Poland based on the ageing index (calculated as a ratio of pre-working age population to post-working age population; cf. Długosz, 2003, 2007) reveals that between 1999–2004 and 2005–2011 the number of people at the post-working age increased from 73 to 87 per 100 pre-working age population, i.e. by 14 people (Table 1).

The parent support ratio (measuring the demands on families to provide support for their oldest-old members) was rising in rural areas from an average of over 6 people aged 85+ per 100 aged 50–64 years in the years 2005–2007 to more than 7 in the period 2008–2011 (Table 1). It is notable that the higher value of the ratio, the more obligations and challenges for the state that has to provide support and care for old people (cf. Kurek, 2008; Łobodzińska, 2011). The assumption underlying the ratio is that older people usually receive care

from their families, usually from their children. As the latter have many other responsibilities too, they are sometimes called a ‘sandwich generation’ to account for the fact they are ‘squeezed’ between their work, the care of their old parents and the support for their children that are born later and thereby stay longer in the education system (Jóźwiak, Kotowska, www.prezydent.pl...).

Demographic analyses also focus on determining the pace of population ageing. The tool that is used to this end is called the indicator of ageing intensity. It is calculated as a ratio between people aged 80+ and 60+ in the population and shows the oldest-old population as a proportion of all elderly population. Indirectly, the ratio also shows how long old-age benefits are likely to be drawn and the demand for certain healthcare services and various forms of medical care (Łobodzińska, 2011). Its 2005–2007 value calculated for Polish rural areas was 18 oldest-old people per 100 people in the age group 60+, but in the next period, 2008–2011, it was nearly 20 to 100, so it increased by almost 2 people (Table 1).

Table 1. Some characteristics of the population in Poland

Population density (in pers. per sq. km)			Ageing index			Natural increase per 1,000 population (‰)		
	I	II		I	II		I	II
PL	122.2	122.3	PL	82.5	105.2	PL	0.0	0.5
ua	1115.4	1090.9	ua	89.8	119.7	ua	-0.6	0.2
ra	50.2	51.2	ra	73.4	87.3	ra	0.8	0.9
	a			a			a	
200.1-563.5	2.8	3.4	180.1-540.0	0.5	1.2	5.1-12.9	6.8	7.3
100.1-200.0	11.7	12.4	120.1-180.0	4.4	14.9	2.6-5.0	21.4	19.9
50.1-100.0	34.8	33.4	100.1-120.0	10.5	19.0	0.1-2.5	28.3	28.7
35.1-50.0	25.5	25.4	80.1-100.0	24.8	27.8	-2.4-0.0	24.9	24.9
2.1-35.0	25.2	25.4	26.8-80.0	59.8	37.1	-4.9 - -2.5	12.0	12.5
						-19.3 - -5.0	6.6	6.7
Dynamics of population number			Parent support ratio			Demographic dynamics rate		
				III	IV		I	II
PL	100.1		PL	5.3	6.3	PL	1.0	1.0
ua	99.0		ua	4.6	5.7	ua	0.9	1.0
ra	101.8		ra	6.6	7.4	ra	1.1	1.1
	a			a			a	
110.1-154.8	5.9		10.1-22.1	11.4	12.1	1.3-3.0	50.2	49.9
105.1-110.0	8.8		8.1-10.0	17.2	18.5	1.0	12.3	12.6
100.1-105.0	35.1		6.1-8.0	31.0	32.1	0.2-0.9	37.6	37.4
95.1-100.0	42.4		5.1-6.0	17.7	19.1			
90.1-95.0	6.4		1.1-5.0	22.7	18.2			
30.2-90.0	1.4							
Femlinisation rate at age 20-34			Intensity of ageing			Total inflow per 1,000 population (‰)		
	I	II		III	IV		I	II
PL	97.0	97.0	PL	16.2	17.4	PL	10.9	11.8
ua	99.7	99.4	ua	15.1	16.2	ua	9.9	10.3
ra	92.7	93.3	ra	17.9	19.6	ra	12.7	14.1
	a			a			a	
110.1-119.7	0.3	0.6	20.1-32.1	24.2	26.1	30.1-73.0	2.1	3.8
100.1-110.0	7.9	8.5	18.1-20.0	25.6	23.3	15.1-30.0	15.6	18.6
90.1-100.0	53.3	55.8	16.1-18.0	26.7	24.5	12.1-15.0	19.3	18.8
80.1-90.0	35.0	32.6	14.1-16.0	15.9	18.5	9.1-12.0	36.5	32.6
61.8-80.0	3.5	2.5	5.9-14.0	7.6	7.6	4.7-9.0	26.5	26.2
Share of pre-working age population (%)			Birth rate per 1,000 population (‰)			Total outflow per 1,000 population (‰)		
	I	II		I	II		I	II
PL	18.2	15.5	PL	9.5	10.3	PL	11.3	12.1
ua	16.3	14.0	ua	8.6	9.8	ua	11.1	12.4
ra	21.2	17.7	ra	11.0	11.0	ra	11.7	11.7
	a			a			a	
20.1-29.8	69.0	9.3	12.1-19.6	27.5	24.9	15.1-40.3	19.0	18.1
18.1-20.0	23.5	31.4	11.1-12.0	22.4	23.6	13.1-15.0	20.5	18.7
16.1-18.0	6.3	39.2	10.1-11.0	21.9	25.5	11.1-13.0	26.8	24.8
14.1-16.0	0.8	16.4	9.1-10.0	15.6	14.6	9.1-11.0	20.5	22.9
8.0-14.0	0.4	3.7	3.6-9.0	12.6	11.5	4.6-9.0	13.2	15.5
Share of working age population (%)			General fertility rate			Rate of total migration per 1,000 population (‰)		
	I	II		I	II		I	II
PL	66.8	68.3	PL	3.6	4.1	PL	22.3	23.9
ua	69.1	69.2	ua	3.2	3.9	ua	20.9	22.8
ra	63.2	66.8	ra	4.5	4.4	ra	24.4	25.8
	a			a			a	
68.1-75.1	2.3	30.5	5.1-8.5	29.6	20.4	35.1-89.7	6.9	9.3
66.1-68.0	10.3	28.5	4.6-5.0	25.8	29.1	30.1-35.0	7.8	9.5
64.1-66.0	24.9	23.6	4.1-4.5	23.8	30.3	25.1-30.0	22.8	22.2
62.1-64.0	25.6	12.4	3.6-4.0	12.4	14.4	20.1-25.0	39.0	32.2
48.2-62.0	37.0	5.0	1.3-3.5	8.4	5.8	9.7-20.0	23.5	26.8
Share of post-working population (%)			Death rate per 1,000 population (‰)			Index of migration effectiveness		
	I	II		I	II		I	II
PL	15.0	16.3	PL	9.6	9.8	PL	-1.8	-1.4
ua	14.6	16.8	ua	9.2	9.7	ua	-5.8	-9.4
ra	15.6	15.5	ra	10.2	10.1	ra	3.8	9.6
	a			a			a	
21.1-43.7	9.0	7.1	14.1-24.9	9.4	9.5	30.1 - 74.1	6.2	8.6
18.1-21.0	17.9	18.2	12.1-14.0	16.9	16.5	10.1 - 30.0	15.2	17.9
15.1-18.0	30.2	32.2	10.1-12.0	27.8	29.0	0.1 - 10.0	16.9	16.4
12.1-15.0	32.5	33.3	8.1-10.0	35.1	34.5	-9.9 - 0.0	21.6	22.7
6.6-12.0	10.4	9.2	4.3-8.0	10.8	11.5	-29.9 - -10.0	34.9	30.7
						-51.8 - -30.0	5.2	3.7

Explanation: a – % of rural gminas within particular bands (N = 2171); PL – Poland; ua – urban areas; ra – rural areas; I – 1999–2004; II – 2005–2011; III – 2005–2007; IV – 2008–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical

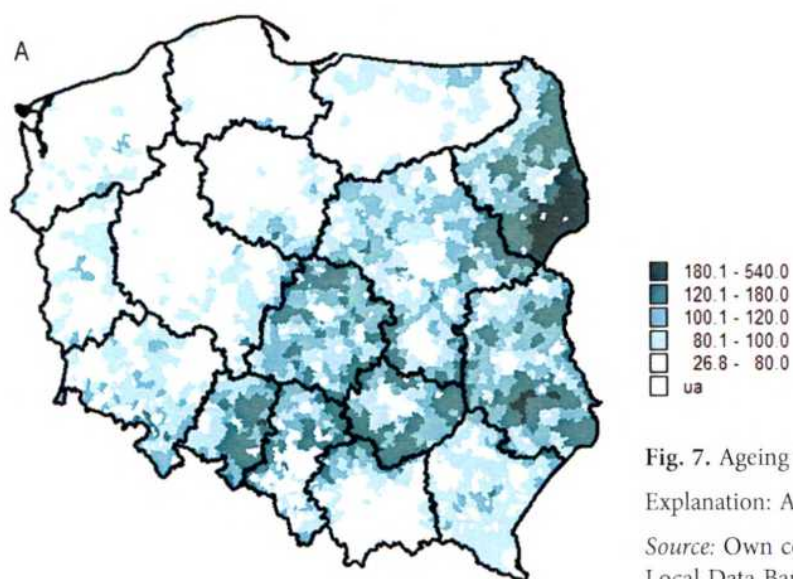


Fig. 7. Ageing index in rural areas in Poland

Explanation: A – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

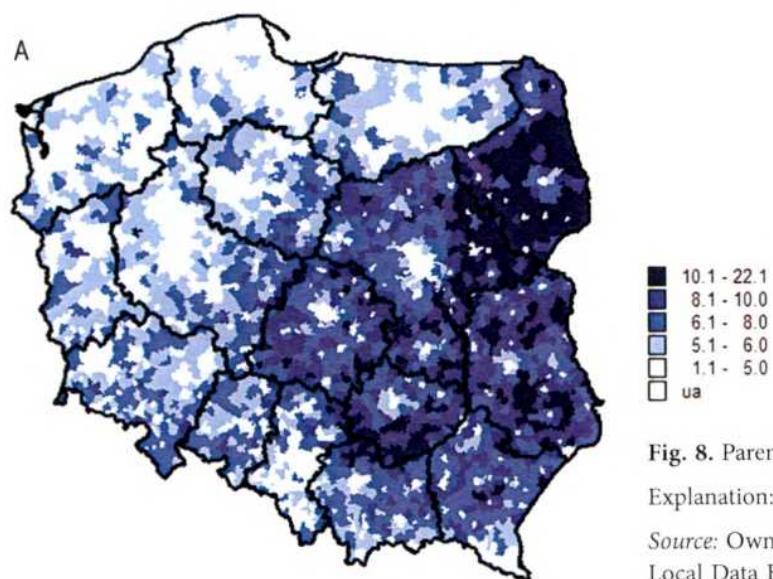


Fig. 8. Parent support ratio in rural areas in Poland

Explanation: A – 2008–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

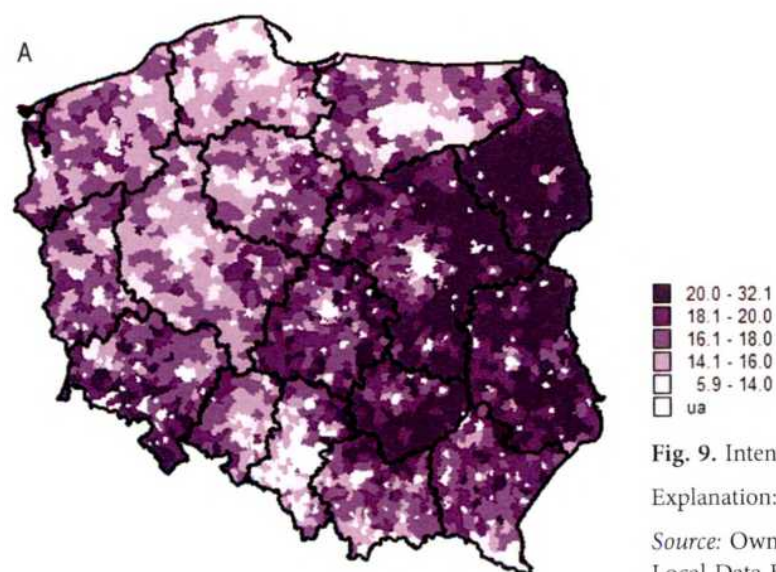


Fig. 9. Intensity of ageing in rural areas in Poland

Explanation: A – 2008–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

High values of indicators revealing the level of demographic ageing and the pace of population ageing are mainly observed in eastern Poland (Fig. 7, 8, 9).

5. Vital statistics

Before vital statistics of population are discussed more at length, let me mention that they consist of the following indicators: a birth rate, a general fertility rate, a death rate, a rate of natural increase, and a demographic dynamics rate.

A rural birth rate of around 11‰ was quite stable in the analysed period (Table 1), despite a small increase in the number of births in rural areas from ca. 161,000 in the years 1999–2004 (the national total was around 365,000) to about 164,000 in the years 2005–2011 (the national total was estimated then at ca. 394,000). A relatively high coefficient of correlation between the average marriage rate and the birth rate ($r = 0.5386$, $\alpha = 0.00$) shows that the definite majority of rural children born in the analysed years were legitimate. The number of women at childbearing age had little bearing on the number of births ($r = 0.3920$, $\alpha = 0.00$), because of the demographic transition that started in Poland already in the 1990s. One of its impacts is that the birth

of the first child is postponed until late reproductive age, which sometimes causes that women do not have any children at all. This seems to explain why Polish rural areas did not attain a rate of 2.1 children per woman at childbearing age (ensuring replacement reproduction), although the number of births slightly increased with the baby boomers reaching their reproductive age (Table 1). High birth rates that are noted today in the rural areas of northern and south-eastern Poland (Fig. 10) arise from high general fertility rates (Fig. 11) (the correlation between the birth rate and the general fertility rate was very high – $r = 0.8922$, $\alpha = 0.00$).

Vital statistics consider not only births but also deaths. In all Poland, including its rural areas, mortality was decreasing after 1990s with improving living conditions and better access to medical care (Szymańska, Biegańska, 2012). The number of deaths was quite stable in rural areas in the analysed period and amounted to ca. 150,000, that is 10‰ (the death totals in 1999–2004 and 2005–2011 were, respectively, around 367,000 and 376,000), (Table 1). Rural areas where death rates are high are also characterised by low dynamics of the number of population (cf. Fig. 1), unfavourable age structure (cf. Fig. 4–6) and ageing populations (cf. Fig. 7–9). Most of these areas occur in eastern Poland (Fig. 12).

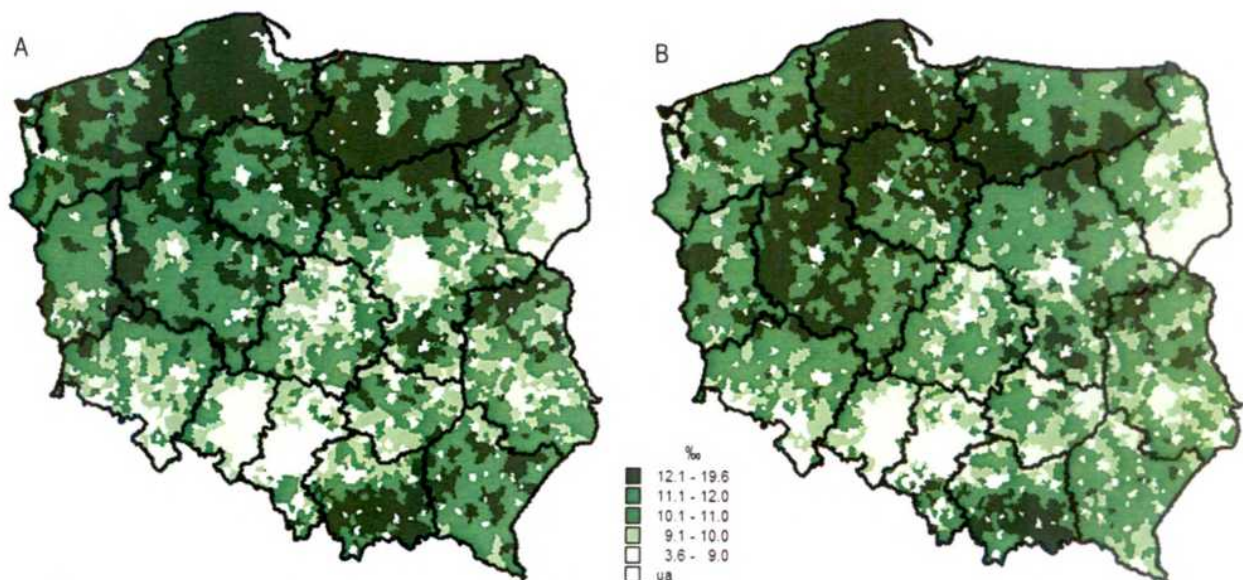


Fig. 10. Birth rate per 1,000 population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

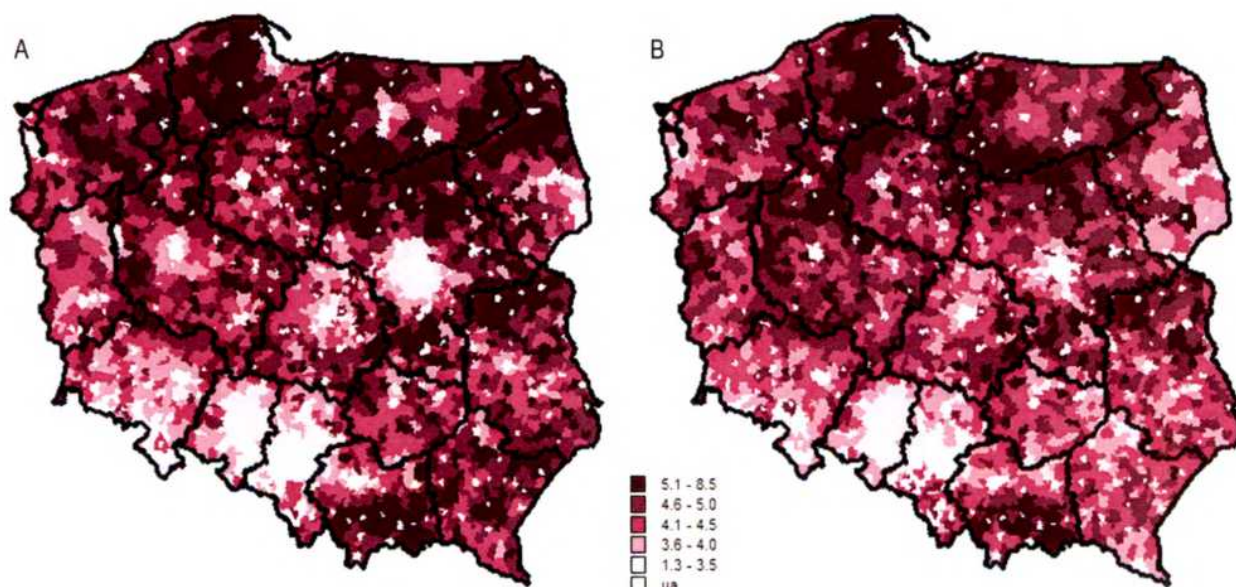


Fig. 11. General fertility rate in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

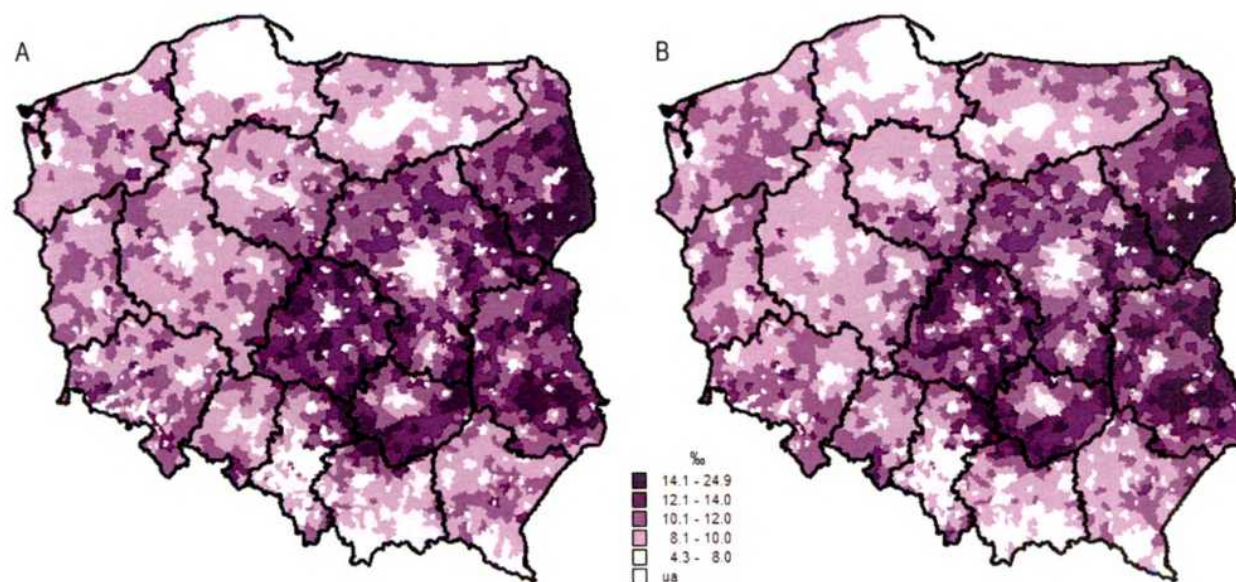


Fig. 12. Death rate per 1,000 population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

Natural increase is estimated as a function of births and deaths. In the period in question, natural increase slightly rose in rural areas, to 1‰ (cf. Fig. 13), but continued to be low. This fact is particularly noteworthy, because until mid-1980s Poland was in the group of countries where the rates of natural increase were the highest in Europe – the

Polish rate of natural increase for rural areas was over 10 times higher than it is today.

Another indicator that can be employed to analyse rural areas is a demographic dynamics rate (i.e. the number of births per death). There are three ranges of values that the rate can take: $0 < W_d(t) < 1$ (below-replacement reproduction), $W_d(t) = 1$ (re-

placement reproduction), $W_d(t) > 1$ (above-replacement reproduction). In the period in question, Polish rural areas were estimated to have the rate at a level of 1.1. Yet, although rural areas continued to have more births and deaths, the demographic dynamics rate decreased considerably (before the early 1990s its rural value was twice as high as it is now).

Above-replacement reproduction and positive natural increase were identified in contiguous rural areas occurring mainly in northern, western and southern Poland. Eastern Poland and large spaces in Opolskie, Śląskie and Dolnośląskie have rural areas characterised by below-replacement reproduction and negative rates of natural increase (Fig. 13, 14).

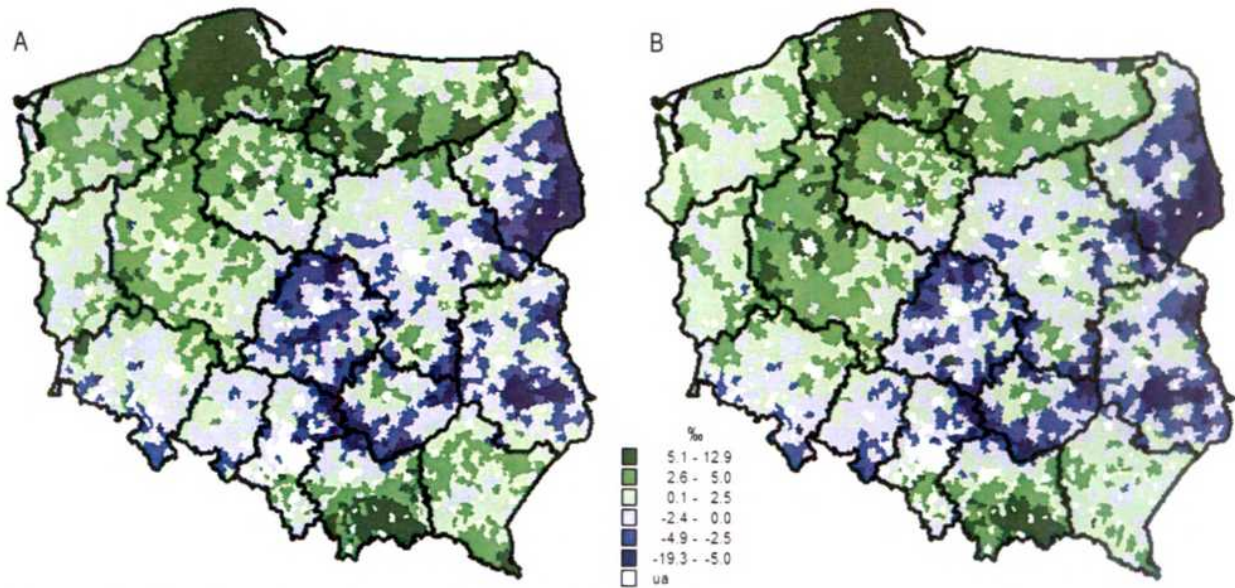


Fig. 13. Natural increase per 1,000 population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

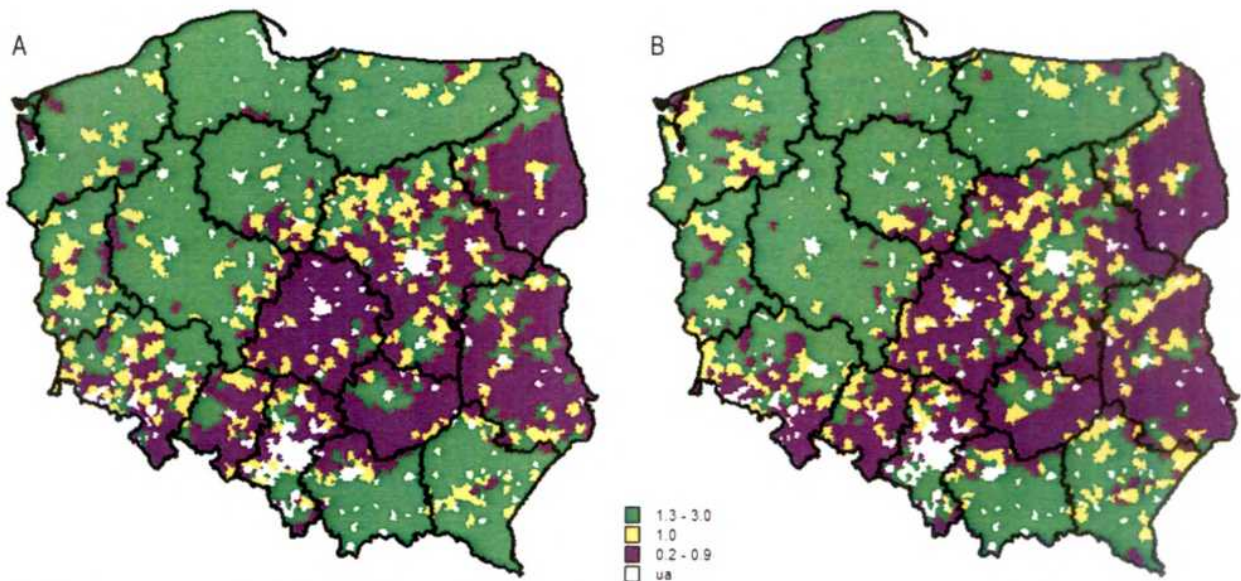


Fig. 14. Demographic dynamics rate in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

6. Migrations of population

The next demographic characteristic that serves the identification of changes in rural population is migrations. The migration of population is described with indicators such as a rate of migration inflow, a total migration rate and the index of migration effectiveness. The rate of migration outflow has been omitted from the analysis, because its variations in the period in question were insignificant.

According to the first indicator, the dynamics of migration to rural areas was very high in the period in question (see Fig. 15), the highest in those areas that occurred in close and more distant peri-urban areas of particularly large cities. Many studies show (Szymańska, Biegańska, 2011b) that population started flowing to rural areas already in the early 1990s. The range of factors determining in-migration, particularly to peri-urban areas, consists of social factors (less populous areas are chosen), economic factors (lower cost of living) and environmental factors (living closer to the nature). Regardless of what motivates migrants, their choices confirm that the suburbanisation processes in Polish rural areas, particularly counter-urbanisation and urban sprawl, are advancing (Szymańska, Biegańska, 2011a, 2011b). The processes are reflected in the amount of population flowing to rural areas

as that rose from 12.7‰ in the years 1999–2004 to as much as 14.1‰ in 2005–2011 (12.0‰ in 1990).

In this analysis, migration in rural areas is also assessed with a total migration rate and the index of migration effectiveness. Fig. 16 shows that the mobility of population living in rural areas was increasing. An average rate of total migration was 24‰ between 1999 and 2004, but in the years 2005–2011 it reached almost 26‰. The index of migration effectiveness pointing to growing interest in rural areas as a migration destination confirms this trend. Compared with the years 1999–2004 when its rural value was 4 people per 100 migrants, in the period 2005–2011 it was almost 10 people (Table 1) (it was minus 2 per 100 migrants in 1991). A high rate of total migration and a high index of migration effectiveness (Fig. 16, 17) were found in the peri-urban areas of large cities. It is noteworthy that their values are determined not only by demographic factors (a favourable age structure, positive natural increase, high dynamics of the number of population), but also by social factors (a considerable share of people with secondary and tertiary education, a high percentage of people with jobs outside agriculture), economic factors (a large number of firms), and infrastructure factors (Szymańska, Biegańska, 2011b). All the factors make rural gminas adjacent to large cities more competitive than those occurring in so-called peripheral rural gminas.

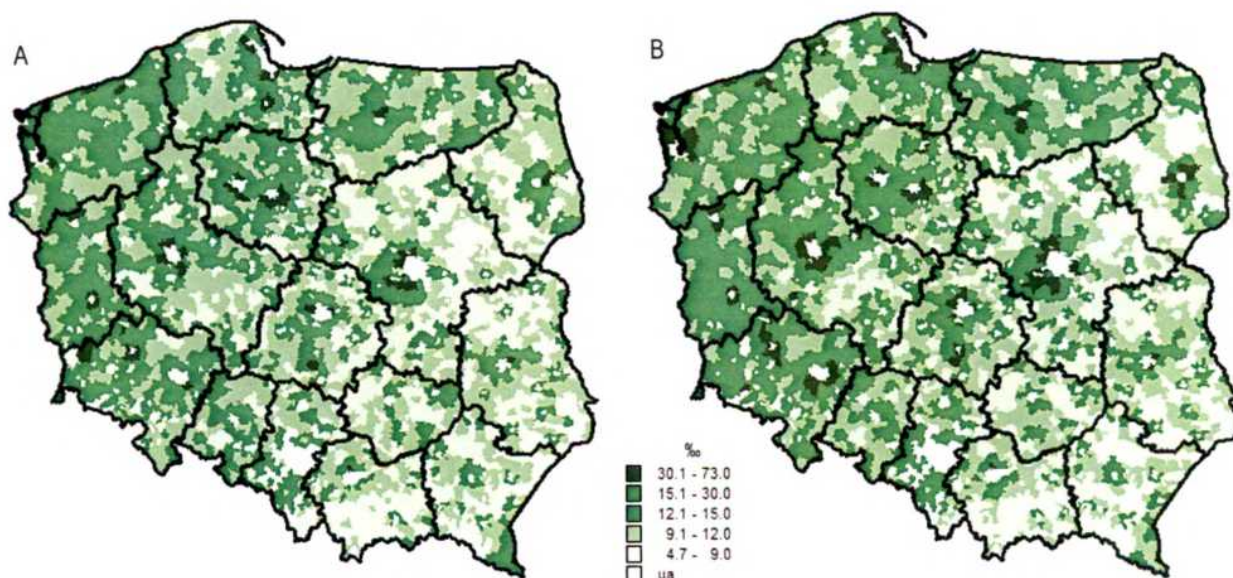


Fig. 15. Total inflow per 1,000 population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

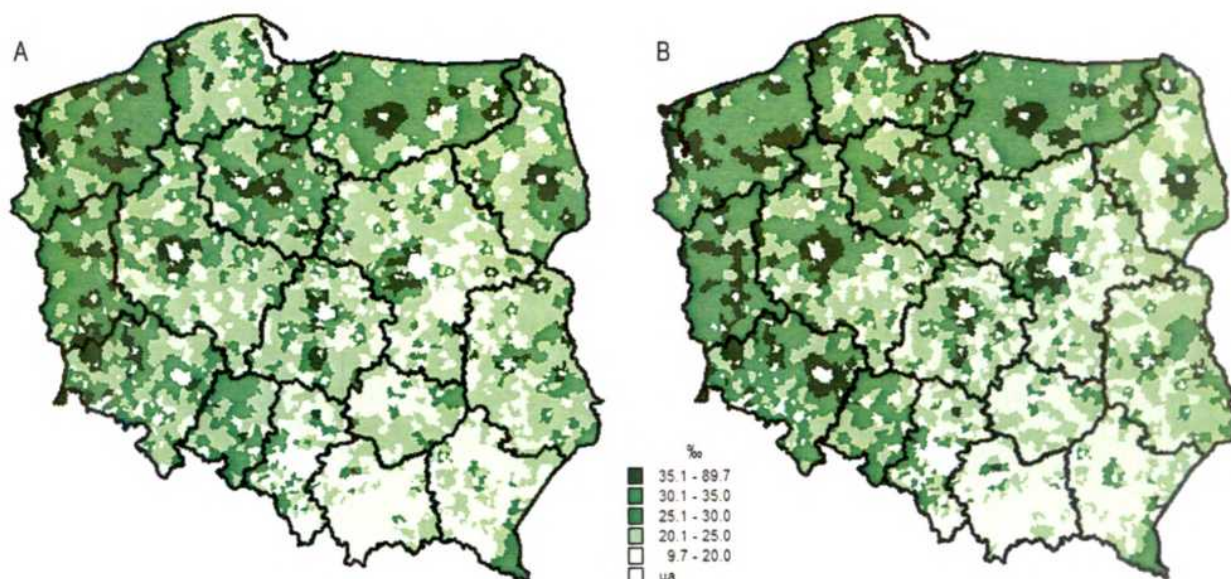


Fig. 16. Rate of total migration per 1,000 population in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

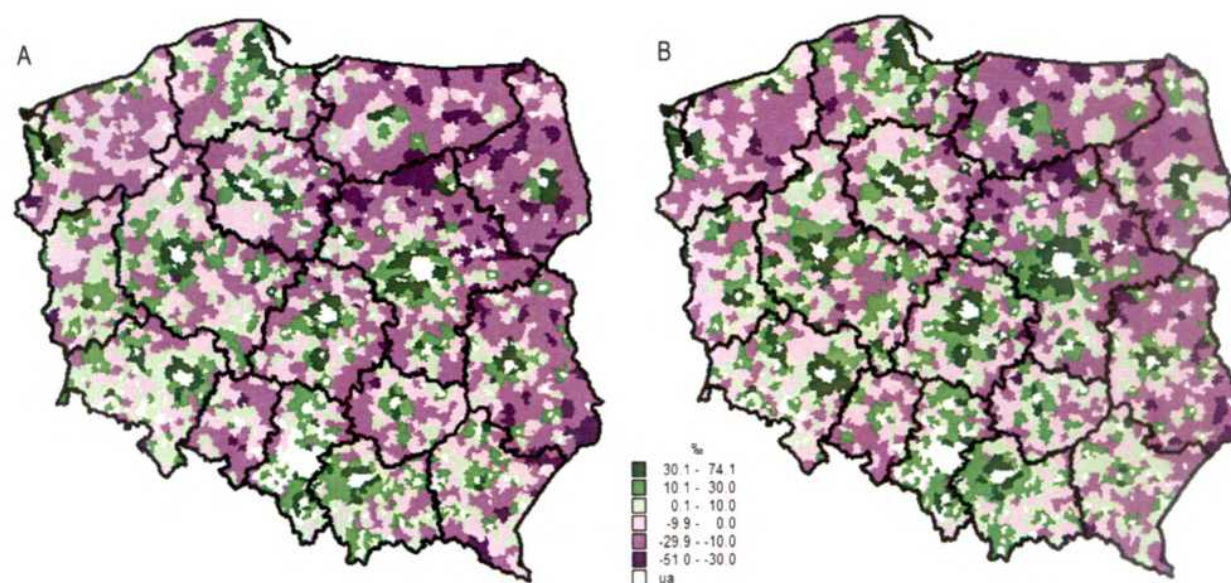


Fig. 17. Index of migration effectiveness in rural areas in Poland

Explanation: A – 1999–2004; B – 2005–2011

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

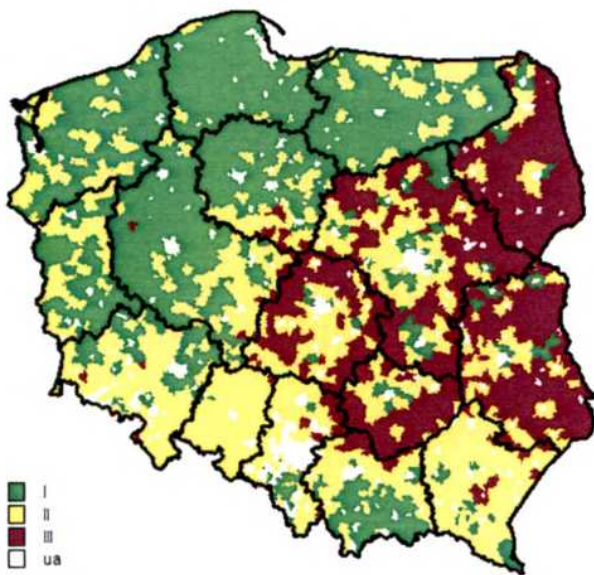
7. Classification of rural areas in Poland with the k-means method

To find out whether the demographic structures and processes in Polish rural areas show regional

similarities, the k-means method enabling the aggregation of analysed objects into clusters was applied. The procedure used the means of eighteen variables (see Material and research methods) representing population dynamics and density, gender and age structures, migrations, and vital statistics from the years 2005–2011.

As a result, three clusters of rural areas have been formed. Cluster I with 705 (32.5%) rural gminas shows high dynamics of the number of population, because the areas are very attractive for in-migrants and natural increase is high. Compared with the other groupings, the rates of population inflows and outflows in cluster I are substantial, leading to very high rates of migration inflows and outflows and a significant index of migration effectiveness. As birth rates are high and death rates are low, the cluster I gminas have natural increase that is both positive and high, as well as above-replacement reproduction. High birth rates in cluster I are related to high general fertility rates that translate into relatively high shares of the pre-working age population, moderately high shares of the working-age population, and modest shares of the post-working age population. As a result, the values of the indicators showing the level of demographic ageing and the pace of population ageing are low. Cluster I has also been found to have slightly higher aver-

age feminisation rates than the other clusters (in the age group 20–34 years) and moderate population density (Table 2). The demographic structure and processes in rural gminas comprising cluster I show them to have promising conditions of demographic development. Gminas comprising this cluster occur in the vast and contiguous areas in northern Poland, and partly in western and southern regions. In central and eastern Poland, they constitute the peri-urban areas of large cities (Fig. 18). Cluster II is made of 896 rural gminas that account for 41.3% of their total number. These gminas are different from the others in that they have very high density of population (Table 2) and average values of the other variables. The conditions of demographic development are moderately promising. These gminas mainly occur in the southern part of the country (Dolnośląskie, Opolskie, and Śląskie, the northern part of Małopolskie and Podkarpackie) and in the peri-urban areas of large cities lying in central and partly in eastern Poland (Fig. 18).



Cluster III has 570 gminas (26.3%) where the analysed structures and processes are the least promising of demographic development. The dynamics of the number of population is low and some areas are affected by depopulation. The age structure in these gminas (small shares of the pre-working age and working age populations, a considerable share of the post-working age population) and the gender structure (a significant deficit of women at matrimonial age) are unfavourable. Other neg-

Fig. 18. Classification of rural areas in Poland in the context of demographic structures and processes (by usage of k-means method)

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

ative characteristics are advanced ageing processes, low number of births, a fairly high number of deaths, negative natural increase and reproduction below the replacement level. The mobility of their residents is also relatively low and more people leave the gminas than arrive (so the index of migration effectiveness is low). Among all analysed gminas, those in cluster III have the lowest population density. Most of them occur in eastern Poland (Fig. 18).

Table 2. Values of k-means in clusters

A	I	II	III
1	0.00	0.25	-0.39
2	0.62	-0.05	-0.69
3	0.25	0.25	-0.71
4	0.85	-0.29	-0.59
5	0.58	0.27	-1.14
6	-0.92	-0.04	1.21
7	-0.83	0.02	1.00
8	-0.78	-0.17	1.23
9	-0.68	-0.11	1.02
10	0.91	-0.37	-0.54
11	0.63	-0.49	-0.01
12	-0.82	-0.14	1.24
13	1.00	-0.07	-1.12
14	1.06	-0.22	-0.96
15	0.50	-0.07	-0.51
16	0.38	-0.23	-0.11
17	0.57	-0.15	-0.47
18	0.28	0.16	-0.59

Explanation: I – cluster I; II – cluster II; III – cluster III; A – variables; 1 – population density (persons per sq. km); 2 – dynamics of population number (%); 3 – feminisation rate at age 20–34 years; 4 – share of pre-working age population (%); 5 – share of working age population (%); 6 – share of post-working age population (%); 7 – ageing index; 8 – parent support ratio; 9 – intensity of ageing; 10 – birth rate (‰); 11 – general fertility rate; 12 – death rate (‰); 13 – natural increase (‰); 14 – demographic dynamics rate; 15 – total inflow (‰); 16 – total outflow (‰); 17 – rate of total migration (w ‰); 18 – index of migration effectiveness

Source: Own compilation on the basis of data derived from Local Data Bank, Central Statistical Office

8. Conclusions

The main finding that the research on Polish rural areas has provided is that their demographic structures and processes show inter-regional differences. According to the outcomes of the k-means method, rural areas with promising demographic conditions that prevail in northern and western Poland and in the immediate peri-urban areas of cities in central and eastern Poland coexist with rural areas where the conditions are moderately promising (southern, central Poland and some patches in eastern Poland) and the least promising (mainly eastern Poland).

As shown, the balance of migration and natural increase are currently positive in rural areas, so the number of rural population is growing. This implies that its share in the total country's population will also be increasing in the long term. These demographic trends confirm migrants' rising interest in rural areas and provide grounds for believing that their demographic development will continue.

Polish rural areas follow the same path of demographic development as most rural areas in Western Europe. Areas adjacent to towns and large cities, but also the more distant ones, still receive increased inflows of urban population and have positive migration balances, as a result of which the peri-urban

areas keep expanding. Most people migrating to the rural parts of peri-urban areas are young. Their inflows and the procreative decisions they make rejuvenate the areas, leading to the development of demographically young circles around cities on the map of Polish rural areas.

As found, the gender structure and the age structure of some rural areas still show negative trends, with a rising level of demographic ageing and an increasing pace of population ageing.

The rural birth-to-death ratio in rural areas is deteriorating. Although the demographic dynamics rate is still positive and ensures a surplus of births over deaths, the unchanging level of reproduction in rural areas prevent population replacement. Because rural areas, like all other areas in the country, need sustainable development, an appropriate pronatalist policy is necessary to increase the number of births per woman at childbearing age, or at least to maintain its present level. *P 34,485*

The changes in the demographic structure and processes in Polish rural areas that the research has identified are not considerably different from their general pattern observed in highly developed countries. In both cases, ageing processes and changes in reproduction patterns, nuptiality, and migrations are noticeable, which are less intense compared with those occurring in urban areas.

Note

(1) In 2011, Poland had 2,173 gminas that either met the formal and legal criteria for being classified as rural or had a rural part. The gmina of Szczawnica and the gmina of Jaśliska have been omitted from the analysis. The status of Szczawnica changed from urban to urban-rural in 2008 and Jaśliska became a rural gmina in 2010 (before that it was part of the gmina of Dukla).

Acknowledgements

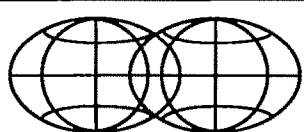
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Travelling to services in the daily urban system of Olomouc

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Abstract. The service sector is quite broad: it includes basic services for the population as well as highly sophisticated services, public as well as commercial services, etc. Commuting to services is one of the fundamental regional processes and together with work commuting it creates an entry basis for the construction of so-called catchment, or nodal regions which should be crucial in the construction of an administrative division of a country.

The main objective of this paper is to identify a selected group of spatial interaction in the daily urban system of Olomouc, i.e. in a region dominated by work commuting to the city of Olomouc. More specifically, the paper deals with the interaction of commuting to a wide range of services of non-commercial (social) as well as of commercial character in two hierarchical levels – local and micro-regional. Based on the data obtained by the method of questionnaire research from local leaders (mayors) we analysed the mobility of people to primary and secondary schools, hospitals, shops, culture and sport. As far as the retail network is concerned, the analysis of spatial differentiation of the catchment area to three large department stores was made for villages in Olomouc hinterland. Individual catchment regions for specific services were constructed by a verified method based on commuting flows. Synthetic evaluation contains an identification of so-called complex service regions in the daily urban system of Olomouc. In comparison with our previous studies we tried to describe basic trends in service infrastructure and changes in travelling to services.

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1. Introduction

Horizontal flows are not restricted only to nature but their analogy can be found also in society. In geography they are called 'spatial interactions' and their basic bearers are individuals and their activities which help to adjust a certain inhomogeneity of social space. These interactions significantly influence geographical organisation and express mutual dependence between areas of geographical space (regions) of various hierarchical level.

Basic questions deal with the character of spatial interactions, especially their direction, intensity and rhythmicity. Real data on spatial interactions are generally difficult to access, especially for larger areas (e.g. countries). Practically the only accessible source of data is data on population migration, more specifically on school and work commuting, which is, however, in the Czech lands part of the Census of Population and Housing analysed from 1961 with approximately ten-year intervals, which, in some cases, does not cover the development of spatial organisation. Other data on spatial interaction (e.g. number of passengers, number of visitors of shopping centres, etc.) are not the subject of further analysis or they are the subject of commercial confidentiality. The primary aim of this paper is the identification of selected spatial interactions in the daily urban system of Olomouc, i.e. in a region dominated by work commuting. More specifically, the paper deals with the interaction of commuting to a wide range of services of non-commercial (social) as well as of commercial character in two hierarchical levels – local and micro-regional. As far as the retail network is concerned, the analysis of

spatial differentiation of the catchment area to three large department stores was made for villages in Olomouc hinterland. Individual catchment regions for specific services were constructed by a verified method based on commuting flows. Based on these catchment regions it is possible to construct catchment regions for a specific range of services, more specifically synthetic or complex service regions. In comparison with our previous studies we tried to describe basic trends in service infrastructure and changes in travelling to services.

2. Theoretical background, methodology

2.1. Theoretical basis of research, literature overview

Services, or the tertiary sector in general, are of increasing importance in a country's economy and the proportion of jobs in this sector is growing. It is also a very broad sector, which includes giving primary and simple services to the population as well as sophisticated branches with high value added. Based on the method of financing, services can be divided into public and commercial. As far as public services are concerned, they should be supported by the government by finance redistribution from the state budget. This characteristic includes sectors such as health care or education, which require a certain solidarity. Public services can be completely non-market or semi-market (i.e. participation of inhabitants in service financing). Commercial, or market services, are purely based on the market principle as a result of a balance of demand and supply.

The localisation of the service sector depends on cities, or regional centres with a lower or higher value of concentration. The availability of basic services and infrastructure is one of the most important topics in urban geography. In the British environment, we can notice this research is becoming more multidisciplinary and new research methods and approaches are used, e.g. segregation and congregation, neighbourhood and community of place, quality of life (Knox, Pinch, 2006), usage of secondary data, qualitative methods based on semi-structured interviews, etc. (Clifford et al., 2010). The spatial growth of a city is closely connected with a reduction in housing development compactness, or with its loosening in suburban areas. The solution to the urban sprawl issue has been known in western countries for decades (e.g. Cloke, 1978); as far as socialist countries are concerned, this process appeared after 1990. The incompactness of housing development has a negative influence on the availability of services, especially when new residential areas are fundamentally mono-functional (Hnilička, 2005).

In the past when data on travelling to services, more specifically to retail, were missing, the hinterland of shopping centres was defined by gravity models. One of the oldest gravity models is Reilly's law of retail gravitation, which was called by Stewart (1948: 35) the first case of recognition and application of demographic gravitation. Reilly (1929: 48–50) argues that the attraction strength of two centres towards an interjacent centre is approximately directly proportional to the number of the centres' inhabitants and inversely proportional to the square of the distance between the centres and an interjacent centre. This model was later supplemented by Converse (1949) and Huff (1964). Reilly's model was originally constructed in order to find out the catchment area of retail and it was based on a purely formal relationship. The model was applied mainly in mapping the population trends in commuting to various kinds of services to the centres and also in identifying the borders of centres (e.g. Fotheringham, O'Kelly, 1989). Löffler (1998) pointed out the different behaviour of the distance function in centres of different sizes when the function of larger centres is usually with an inflection point and larger "bottom" area (the area below the distance function determines the number of

centres' customers). Löffler also provides a detailed overview of input data, which deal with distance as well as with mass, to Reilly's model. As far as Czech literature is concerned, Reilly's model is mentioned by, for example, Maryáš (1983), Řehák et al. (2009) and Halás, Klapka (2010). Maryáš (1983) critically evaluates the ways of delimitation of spheres of influence of retail centres, especially in connection with the validity of original models on the area of Czechoslovakia (CSSR), while conclusions based on studies of Brno and Prague hinterlands correspond to foreign experience. Halás, Klapka (2010) refer to possible application of Reilly's model to more general and contemporary research topics.

Not many studies that would focus directly on the delimitation of catchment regions based on travelling to services can be found in the world's scientific literature. One of the classic studies is a piece of research by Berry (1967), who focused on travelling to services using the example of retail centres in various states of the USA. Berry later tried to generalise his findings also for other regionalisation tasks. A slightly changed type of task was and still is the delimitation of catchment areas of shopping centres (as opposed to settlements/centres – e.g. Lee, Pace, 2005; Baray, Cliquet, 2007). It must be mentioned that the studies are not only products of geographers but also of spatial economists. Lee and Pace (2005) deal with spatial distribution of retail turnover between shopping centres in connection with their mutual location based on the example of Houston. Baray and Cliquet (2007) discuss the possibility of mathematical morphology analysis for the delimitation of shopping centres' hinterland. In the surrounding post-socialist countries' literature there are only works evaluating the transformation of the service sector against the background of social changes (Jakubowicz, 2000; Wilk, 2001; Lauko, 2005) or studies focusing on a specific retail issue (Taylor, 2000; Pokorska, Maleszyk, 2002). Works dealing with spatial differentiation of retail in intra-urban structures can be treated as a separate category, e.g. studies identifying food deserts in changing urban space (Wrigley, 2002; Shaw, 2006; Křižan, Danielová, 2008).

As far as the Czech scientific literature is concerned, the issue of travelling to services has very long tradition mainly thanks to studies coming from the former Geographical Institute of the Czecho-

slovak Academy of Sciences (ČSAV). In the early 1980s Maryáš (Maryáš, 1983) published his theoretical work focusing on the methodology of selection of retail centres and the sphere of their influence, which foreshadowed the research and delimitation of service regions in the next years. This research resulted in the detailed regionalisation of Czechoslovakia (Maryáš, Řehák, 1987a) based on the philosophical concept of the region where residential, work and service functions are relatively closed. This regionalisation comes from a survey on travelling to services in the area of the whole republic, which was published in the Atlas of the population of CSSR and a list of delimited regions was published in Reports of the Geographical Institute of ČSAV (Maryáš, Řehák, 1987b). This regionalisation was followed by Maryáš (1992) with his hierarchy of service centres of Czechoslovakia in which he used all his theoretical as well as empirical findings. Some of the approaches to the question of commuting to services are outlined in the work by Toušek et al. (2008) in a chapter focusing on the geography of services. Besides the traditional approaches applied by Maryáš (1983, 1992) it focuses also on behavioural methods of research in the geography of services, mainly in the intra-urban environment.

2.2. Methodology

The first step in regions-oriented research is a definition of the research area which, in our case, is the region of the daily urban system of Olomouc. The concept of daily urban systems (DUS) was used for the first time by the American geographer Berry (Berry, 1973), on the European continent it was the British geographer Hall (e.g. Hall, 1974; Hall, Hay, 1980) and we are talking about systems which are rooted in the daily life cycle of a region's inhabitants, they are internally coherent and externally (relatively) closed regarding the daily movement of population. This concept is close to the regionalisation of Sýkora and Mulíček (2009), or Sýkora and Mulíček (2009). In both cases, it is the delimitation of regions based on the daily travelling of the population to work. Compared to Hampl (2005) not so many criteria were established for making a municipality the centre of travelling and therefore it is possible to identify also the micro-regional or lo-

cal level. The principle of both types of regionalisation mentioned above is identical (delimitation according to the largest catchment flow). It differs only in details, i.e. in the classification of municipalities which are on the border of the sphere of two or more centres. According to Sýkora and Mulíček (2009) the region of Olomouc has 67 municipalities, according to Halás et al. (2010) it has 65 municipalities (both cases include Olomouc). Both types of region delimitation overlap in 63 municipalities, which is the region which can be called the daily urban system (or work hinterland) of Olomouc and it will be our research region which will be analysed in this paper. Almost identical is the delimitation of the catchment area of Olomouc according to Reilly's model (Kladivo et al., 2010).

The whole area researched belongs to the Olomouc region, most of the municipalities can be found in the district of Olomouc, two municipalities in the district of Prostějov (Olšany u Prostějova and Slatinky) and one municipality in the district of Přerov (Brodek u Přerova). The basis of the area researched is represented by the administrative district of a municipality with extended power (MEP) Olomouc (45 municipalities), a part belongs to the administrative district of MEP Litovel (ten municipalities), Šternberk (five municipalities), Prostějov (two municipalities) and Přerov (one municipality).

The methodology comes from the works by Maryáš (1983, 1988, 1992). Data on the travelling of inhabitants to services are usually not part of statistics and thus it is necessary to complete these data by questionnaire research. Maryáš (1988) recommends for this survey the participation of local leaders, mayors. Although these data can be subjective, they reflect the reality more believably than an analysis of accessible statistical characteristics. The method of questionnaire research was used also in this research. The same unmodified methodology was used also in some Master's theses focusing on research on commuting to services in individual regions of Central and South Moravia, mainly in regions of rural character with small regional centres (e.g. Blešová, 2009; Laštůvková, 2012).

The original, three-decades-old questionnaire was modified and adjusted to present-day reality. The focus of the survey was commuting to public services (health care, education), retail and commercial services, specifically for relaxation (culture,

sport – regions of culture and sport have not been taken into account in previous studies, their inclusion in this study can also be explained by the general classification of the United Nations, which defines them separately). The mayors filled in the questionnaire from the point of view of the main (predominant flow), secondary (partial flow) as well as peripheral (occasional flow) municipalities of commuting to these activities and infrastructure. Following the methodology of Maryáš (1988, 1992) the predominant flow was given 10 points, partial flow 5 points and occasional flow 1 point. Every destination in individual municipalities which was made into a specific service process j by a municipality was given the value v_{ij} . This value represents the relative meaning of destination i for a certain municipality in a certain service process:

$$v_{ij} = \frac{T_{ij}}{PC_{ij} * PT_j} * 100,$$

where T_{ij} is a point value of travelling to destination i in the service process j , PC_{ij} is the number of destinations in this type and PT_j a sum of point values of all types of catchment intensity of the municipalities mentioned in the service process j .

In every municipality, the sum of values v_{ij} was equal to 100% for every service process j . Every service process was then assigned the coefficient k_j according to the meaning, or the frequency of usage. The overall meaning cv_i of destination i for a given municipality for all evaluated service processes is then the following:

$$cv_i = \frac{\sum_j v_{ij} * k_j}{\sum_i \sum_j v_{ij} * k_j} * 100.$$

Again, each municipality $\sum_{cv_i} = 100\%$.

Municipalities were assigned to centres on the basis of prevailing flow in the case when the overall relative meaning of the second centre did not reach more than two thirds of the value of the first one. Municipalities which did not belong to any centre were regarded as oscillatory.

A municipality can, as a centre, be applied on more hierarchical levels of regional scope. The main service level can be defined as being the local level

within which the most important and the most frequented service processes are closed. A municipality was regarded as a centre of local meaning when it was the main destination for three municipalities, taking into account travelling to services also to cities outside this region. A higher service level was defined as being the micro-regional level which includes less frequented service processes. The centre of such a micro-region serves a higher number of municipalities (cca 10–40 municipalities); however, their minimal number is not possible to state because we are often on the border of two or more service micro-regions. The specific service was then regarded as a generator of the micro-regional service level in the case when it was stated as a main destination four or more times less often compared to the most frequent destination.

In order to capture the specific character of travelling to different types of services and simultaneously to maintain the complexity of the research, the partial regions of health care, education, retail and services, or culture and sport, will be analysed separately. Subsequently, based on these sectors we will try to delimitate the complex service regions. Centres of complex service regions will be regarded as being municipalities which were chosen as centres in three out of four partial regions. To individual partial spheres we will assign coefficients based on their overall regional meaning. Based on the assumption that the education region includes only commuting of pupils and students, and it is therefore purely selective, education centres will be assigned the coefficient 1. Health care centres, or retail and services, will be assigned the coefficient 2 because they express the potential commuting of all inhabitants of the area researched. The centres of culture and sport were also selected on the basis of commuting of all inhabitants; nevertheless, the lower coefficient 1 will be assigned to them. The reason is not only their specific nature but predominantly the innovation of their inclusion in regionalisation on the service principle and the effort to keep the highest value possible of their comparability with previous studies where travelling to free time activities was not considered. The next steps will be analogous to the delimitation of partial service regions.

As far as the evaluation of commuting to retail services is concerned, the research is extended by a questionnaire dealing with the catchment of cities

to large shopping centres located on the edge of Olomouc. The representative sample of a minimum of 3% of the population took part in this questionnaire in individual cities. Data on the availability of individual services are complemented by qualitative research which includes informal interviews with inhabitants, city representatives and stakeholders, mainly in the nearest suburban hinterland of Olomouc.

3. Identification of the accessibility of services and amenities in the daily urban system of Olomouc

3.1. Accessibility of health care

Based on the questionnaire research, the area was analysed from the point of view of commuting to general practitioners, paediatricians, dentists, specialists and commuting to hospitals. The basic cri-

terion for health centres on the local level was the presence of a first contact doctor (i.e. GP, paediatrician and dentist). Centres on the micro-regional level are regarded as being municipalities in which the service of a specialist can be found. Also travelling to hospitals was a focus of the questionnaires; however, in this case it is a process characteristic for the micro-regional level of travelling that is higher than the basic level, so it would be better to call it a meso-regional process. Thus travelling to hospitals was omitted from the final evaluation. If it was evaluated separately, the whole region analysed would belong to Fakultní Nemocnice Olomouc (FNOL), while only a few municipalities would oscillate between Olomouc and Šternberk (seven municipalities), Olomouc and Prostějov (two municipalities) and Olomouc and Přerov (two municipalities). In Šternberk, Prostějov and Přerov there are hospitals belonging to health centres AGEL; however, all procedures of medium difficulty and high difficulty are performed by FNOL.

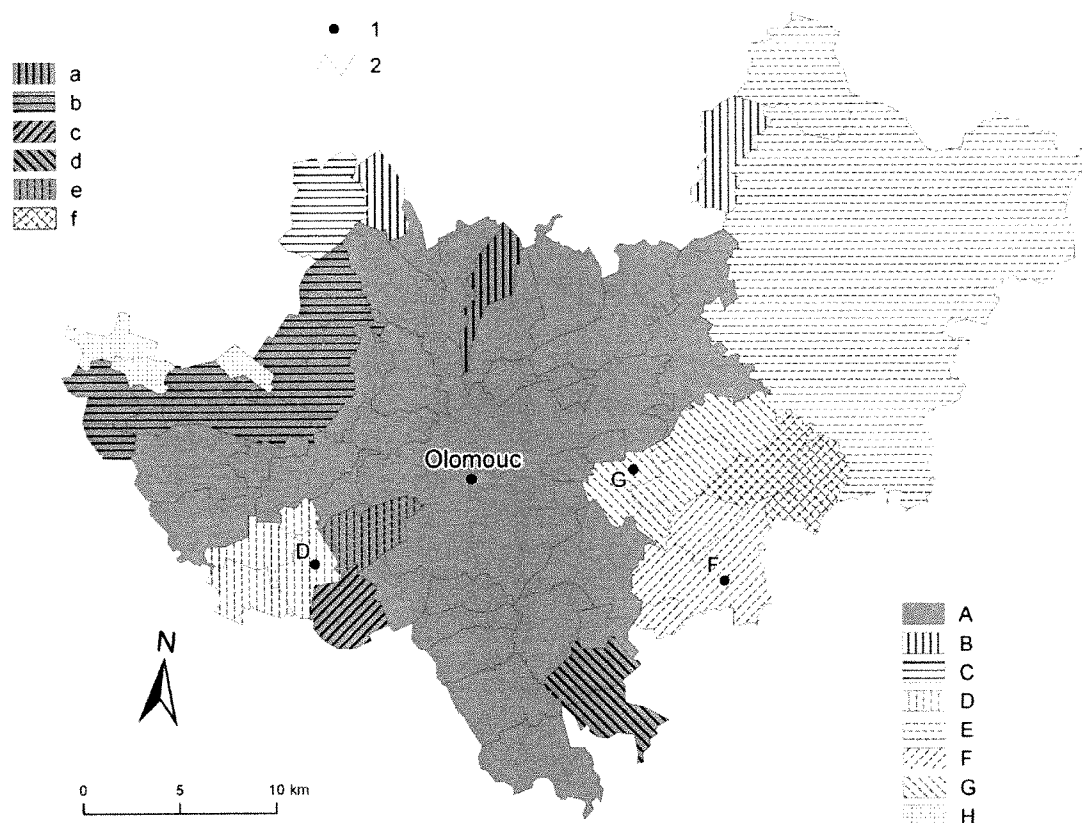


Fig. 1. Health care regions on the local level in DUS Olomouc

Explanation: 1 – centre of local level; 2 – border of municipality; centre, catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Lutín; E – Moravský Beroun; F – Tršice; G – Velká Bystřice; H – Cholina; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Prostějov; d – Olomouc / Přerov; e – Olomouc / Lutín; f – Tršice / Velká Bystřice

Source: Own research

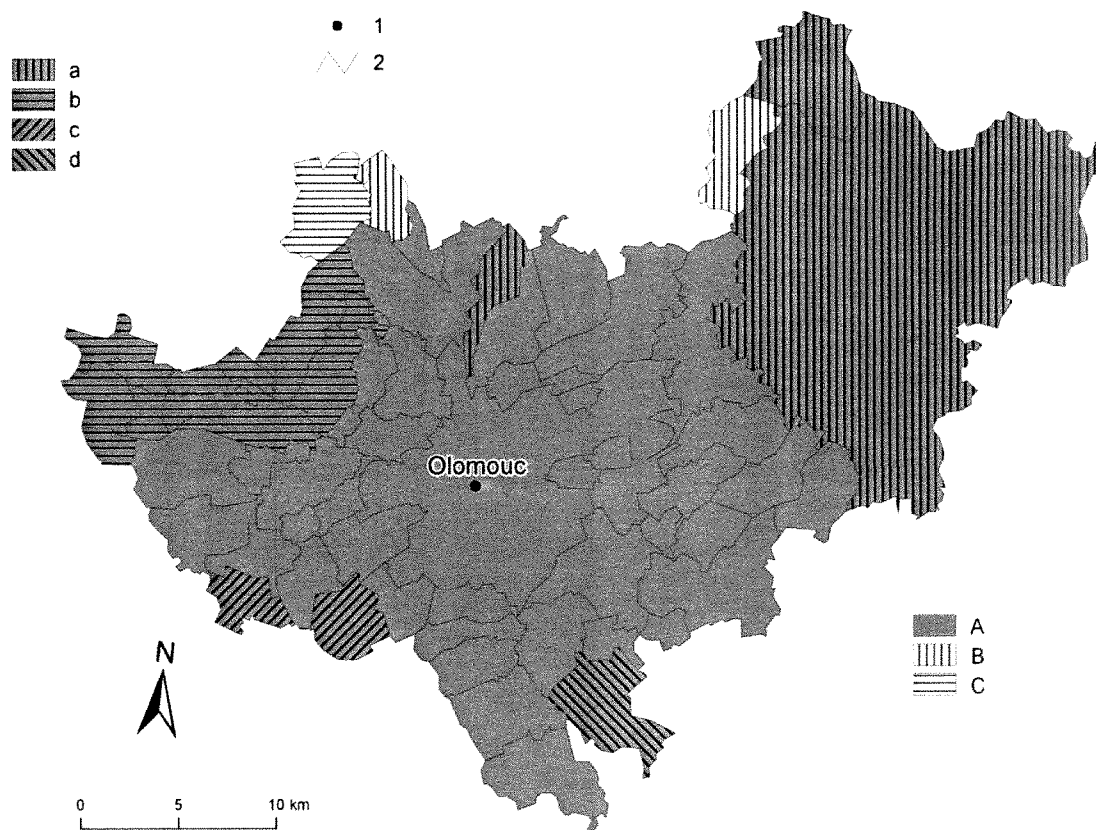


Fig. 2. Health care regions on the micro-regional level in DUS Olomouc

Explanation: 1 – centre of micro-regional level; 2 – border of municipality; catchment area: A – Olomouc; B – Šternberk; C – Litovel; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Prostějov; d – Olomouc / Přerov

Source: Own research

At the local level, we can identify a strong influence of the city of Olomouc, although it was possible to define three internal health care regions (Lutín, Velká Bystřice, Tršice) in its close hinterland and a few catchment municipalities in the periphery (Fig. 1). Simultaneously, we can find an influence of larger cities outside the region in the peripheral municipalities appearing mainly in the oscillation of commuting. Higher levels of travelling to Olomouc can be seen along the roads of regional significance, while highways are felt to be more negative. There is an assumption that commuting to smaller health centres is the case of mainly economically inactive inhabitants on the local level. One of the results of work migration is the usage of health centres in the city by the younger and middle generation working in Olomouc.

From the point of view of the health service on the micro-regional level, the dominance of Olomouc is more noticeable (Fig. 2). In the region there

is no other centre of this hierarchical meaning; only in its periphery can we find a few municipalities belonging to and oscillating between Olomouc and centres outside the region. The most noticeable is the influence of Litovel in the north-western part of the region, mainly in municipalities which administratively belong to ORP Litovel. At the same time it is still valid, of course, that the centres of higher service level are also centres on the lower level of service.

The network of health care institutions has not changed rapidly. It can only be noted that the adaptation to new semi-market conditions took place as did changes in ownership relations. The level of travelling to health care institutions is stable. According to Szczyrba et al. (2006) a huge increase in independent surgeries (from 34 in 1989 to 61 in 2005) can be noticed in MEP Olomouc; most of these surgeries were founded directly in the city of Olomouc.

3.2. Accessibility of education

While evaluating the level of commuting to schools, travelling to primary and secondary schools was analysed in the area researched. From primary schools, we took into consideration only complete primary schools, i.e. schools with lower as well as higher grades (from 1st to 9th grade). Tertiary education can be considered to be the process on a meso-regional, or lower macro-regional level so it was not included in the research.

The only process evaluated in education on the local level was commuting to complete primary schools. Participants of the process of commuting to primary schools are children and therefore

its distance must be minimised regardless of the centre's hierarchy. For this reason the education regions of the local regions in the surroundings show quite a high level of dispersion. In the area analysed, 11 local regions were formed in the surroundings of these centres – Dub nad Moravou, Libavá, Lutín, Náměšť na Hané, Pňovice, Olomouc, Senice na Hané, Tršice, Velká Bystřice, Velký Týnec and Velký Újezd (Fig. 3) (1). Complete primary schools can be found also in other municipalities; however, they do not have the catchment region of minimally two more municipalities. In the peripheral municipalities we can notice also the influence of Šternberk, Litovel, Přerov and Prostějov, either by obvious catchment or by oscillation of commuting.

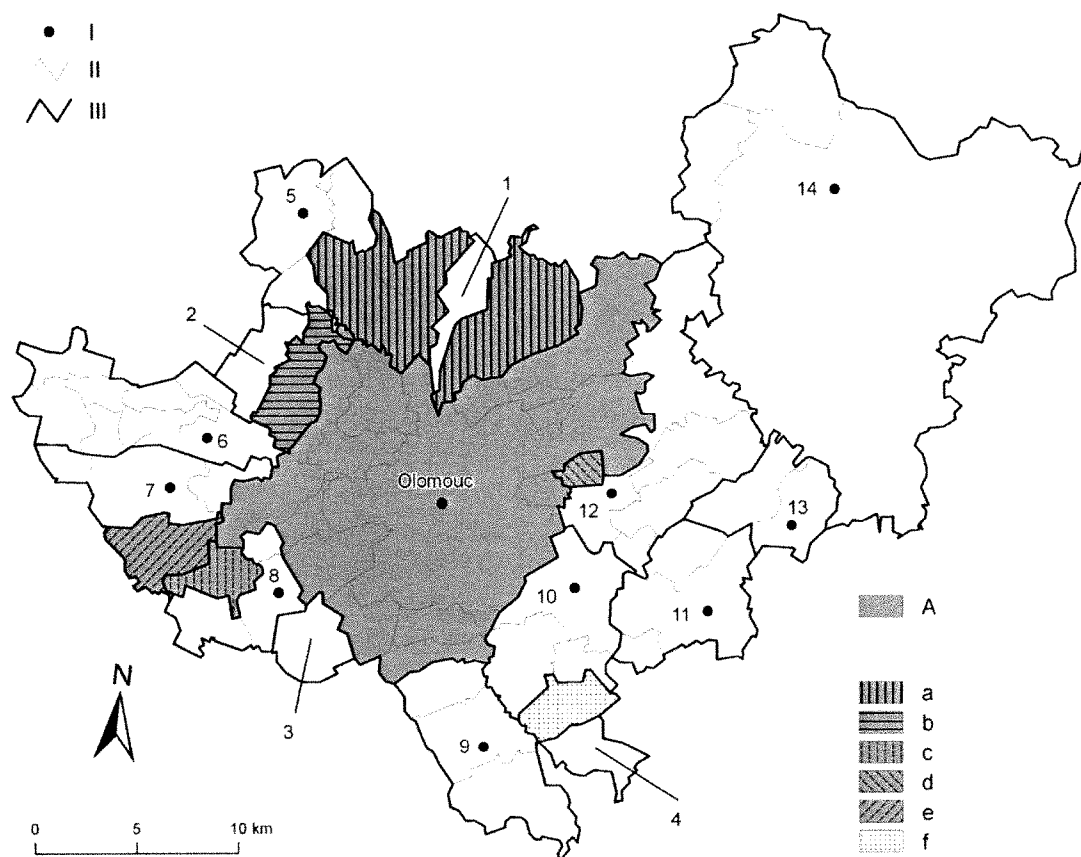


Fig. 3. Regions of education on the local level in DUS Olomouc

Explanation: I – centre of local level; II – border of municipality; III – border of catchment area; centre: 1 – Šternberk, 2 – Litovel, 3 – Prostějov, 4 – Přerov, 5 – Pňovice, 6 – Senice na Hané, 7 – Náměšť na Hané, 8 – Lutín, 9 – Dub nad Moravou, 10 – Velký Týnec, 11 – Tršice, 12 – Velká Bystřice, 13 – Velký Újezd, 14 – Libavá; catchment area: A – Olomouc; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Lutín; d – Olomouc / Velká Bystřice; e – Olomouc / Náměšť na Hané; f – Přerov / Velký Týnec

Source: Own research

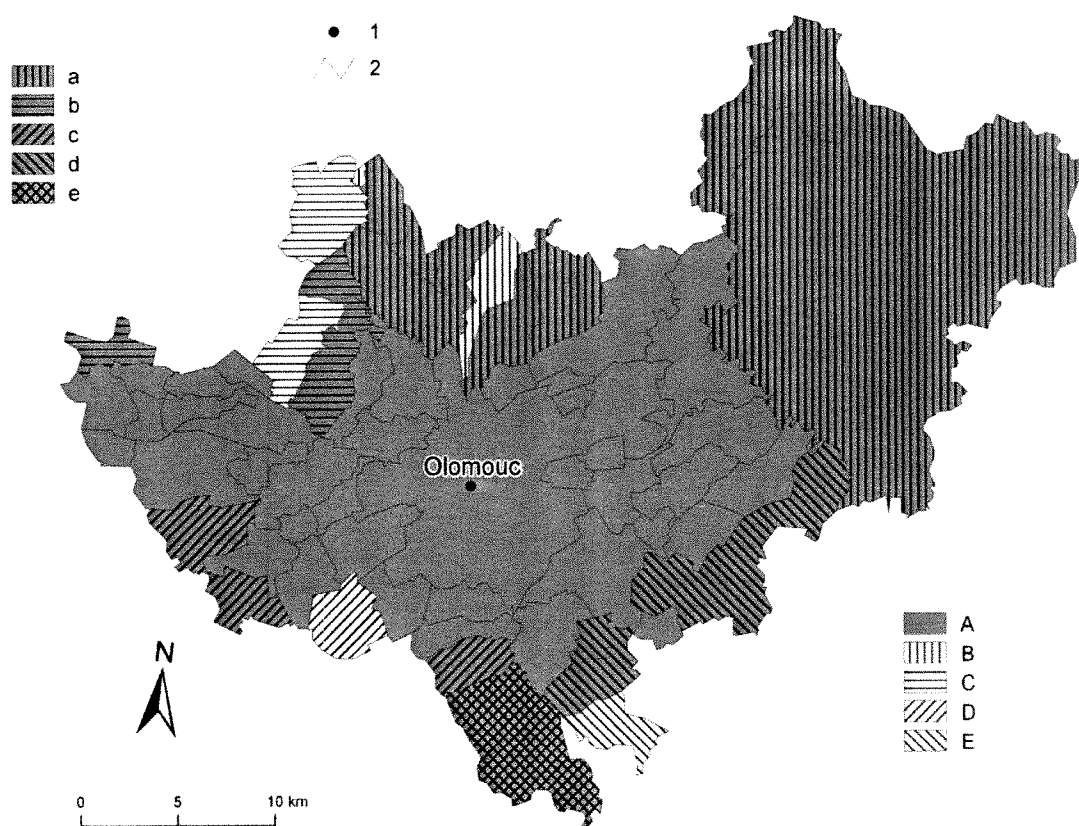


Fig. 4. Regions of education on the micro-regional level in DUS Olomouc

Explanation: 1 – centre of micro-regional level; 2 – border of municipality; catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Prostějov; E – Přerov; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Prostějov; d – Olomouc / Přerov; e – Olomouc / Prostějov / Přerov

Source: Own research

An important phenomenon which can change the local level of education is the on-going process of suburbanisation. Suburbanisation processes cause an overall change in the social structure of the population in Olomouc hinterland and thus also their requirement for higher quality of services provided by town schools. Moreover, village schools in the close surroundings of Olomouc do not have to be able to absorb an increasing number of pupils in areas where the process of suburbanisation is the strongest (Hlušovice, Samotísky, Tověř, etc.). Also the ownership of a vehicle is becoming standard, which lowers or even eliminates the usage of public transport.

Another problem of education, mainly in the city of Olomouc, is the insufficient capacity of kindergartens. In the 1990s, when we experienced a huge increase in individualism and the birth rate decreased, the number of children of preschool age also fell. Therefore, some kindergartens (especially corporate, etc.) were closed because there was no

body to go there. Recently, due to delayed births and mainly to births of baby boomers 1974 – 1980, the capacity of kindergartens is not sufficient anymore. According to data from municipal governments, more than 15% of preschool children do not attend kindergartens.

On the micro-regional level, we focused on commuting to secondary schools, which includes a wide range of secondary vocational schools, training institutions and grammar schools. By the standard process, we identified the only centre – Olomouc. Its catchment area was, compared to health care, narrowed by the influence of surrounding cities, more specifically by Šternberk, Litovel, Prostějov and Přerov (Fig. 4). Secondary schools can be found also in other smaller cities in Olomouc hinterland (Lutín, Velký Újezd); these are, however, either private or narrowly specialised so their applicability is not universal and they almost do not influence regional processes (Zuskáčová, 2011). The charac-

teristics and quality of secondary schools is closely connected with their popularity. Unlike on the local level, it can be noticed that commuting is less bound to distance from the place of residence. Overall it is possible to argue that the network of primary and secondary schools in Olomouc region has not been changed a great deal.

3.3. Accessibility of retail and services

Changes which occurred in the retail sector during the transformation period were very dynamic and thus, for example, processes studied by Maryáš (1988) do not reflect the nature of contemporary shopping and consumer tendencies in society. According to Szczyrba (2005), the spatial-functional structure of the socialist retail network, on the one hand, concentrated retail in city centres; however, on the other hand, it strongly emphasised minimisation of social differences between the city and countryside. According to the concept of the settlement centre system, shops and shopping centres (so-called collective shops) were illogically built in certain villages. The liberalisation of the economy in the early 1990s caused extensive quantitative and qualitative changes in the industry and subsequently also changes in the spatial organisation of retail and services.

Processes that characterise the present-day organisation of the area according to the service principle comprised commuting for daily shopping (food and basic toiletries), buying of clothes and shoes, industrial goods (electrical goods, bikes, sports equipment, etc.) and shopping for furniture and home accessories, travelling to ordinary services (to the hairdresser's, dry cleaning, shoe repair, photographer, etc.), visit to a bank, an insurance company or a pharmacy.

Shopping for daily essentials is, in the absolute majority, restricted to the level of an independent municipality; the aim was to find out the possible deviations in the nature of commuting in the hinterland of the region's main city, especially the influence of concentrated business. Also in other processes it is possible to assume a certain change in relative isolation, or maximal distance of travelling to target municipalities compared to the values of the 1980s.

Compared to Maryáš' conclusions (1988, 1992), it can be stated that the commuting distance to retail has been lowered in all processes. The only increase can be seen in daily shopping, mainly because of shopping trends in large shopping centres and because of the change from daily periodicity to lower frequency periodicity. Local processes include, based on the selected methodology, shopping in a pharmacy or ordinary services, or a visit to banks or insurance companies. In comparison with the past mainly travelling to pharmacies has decreased. The network of pharmacies is denser: compared to 1989, the number of pharmacies in MEP Olomouc has increased at least three times (Szczyrba et al., 2006). This fact indirectly confirms the improvement of health care and availability of basic medical staff in municipalities. Other commuting processes (clothes and shoes, industrial goods, furniture and decorations) were defined as micro-regional travelling. The reverse nature of movement (rising distance) can be seen in travelling to shops with clothes and shoes. The quality of a shopping centre, the range of products or a particular brand are now preferred to its close distance (or price/quality relationship). A new feature is commuting to financial institutions, whose meaning has recently become more important. However, these institutions start to prefer electronic contact to physical, so it is not expected that there will be a dynamic development in this sphere.

In the area analysed, only two centres of retail and services able to create large catchment areas were identified – Olomouc and Náměšť na Hané. Outside the borders of the area, the centres are again Litovel, Šternberk, Prostějov and Moravský Beroun; Přerov has only oscillating influence (Fig. 5). In comparison with health care and education we can notice an enlargement of the catchment region of Olomouc corresponding to almost the micro-regional level in previous partial regions. The reason can be found in better service availability of Olomouc and in the fact that localisation of commercial services is adapted to the highest volume of demands and does not respect minor (e.g. less mobile) groups of inhabitants. While the urban network of retail and services works in conditions of highly-concentrated demand and provides a wide range of products, the rural retail network is satisfied with little concentrated demand and is

connected with higher costs of circulation of goods compared to the local network. Large retail units located on the edge of settled areas resulting from suburbanisation processes can be regarded as an exception. Similar shopping centres are in the cities Velký Týnec (Olympia) and Velká Bystřice (Makro). In both cases, it is very close to Olomouc and thus their meaning was highly unevaluated in the questionnaire research because they are regarded as parts of Olomouc.

On the micro-regional level, only the city of Olomouc was regarded as the centre, while marginal influence is assigned to Šternberk, Litovel, Přerov and Prostějov (Fig. 6). The catchment region of Olomouc covers practically the whole region; only a few border municipalities belong to other municipalities or they oscillate. The spatial depiction of commuting is similar to the local level; only the influence of Náměšť na Hané and Beroun is missing.

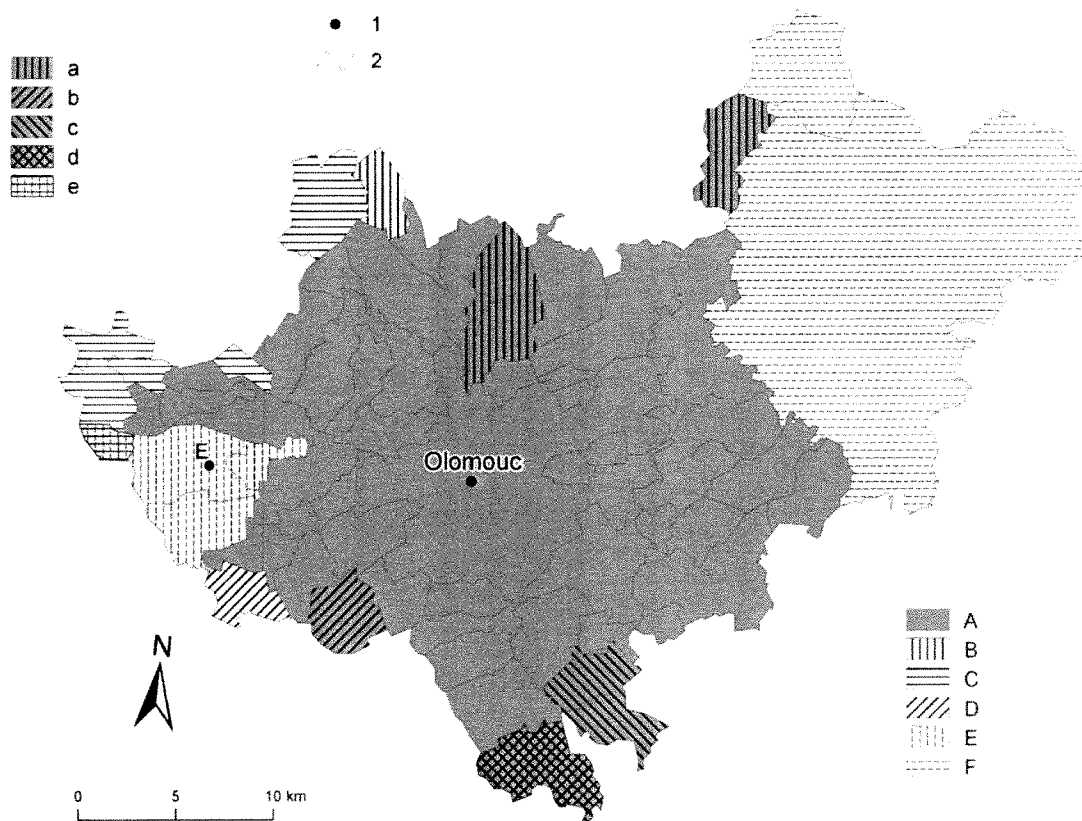


Fig. 5. Regions of retail and services on the local level in DUS Olomouc

Explanation: 1 – centre of local level; 2 – border of municipality; centre, catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Prostějov; E – Náměšť na Hané; F – Moravský Beroun; a – Olomouc / Šternberk; b – Olmouc / Prostějov; c – Olomouc / Přerov; d – Olomouc / Prostějov / Přerov; e – Litovel / Náměšť na Hané

Source: Own research

Apart from Olympia mentioned above and located on the border of the cities Velký Týnec and Olomouc with access to the R35 and the planned R55, two more large shopping centres can be found on the periphery of Olomouc. The shopping centre

Haná is close to the R46 Olomouc-Vyškov continuing to the highway D1 to Brno. Globus is close to the R35 Olomouc-Mohelnice, which should lead to Hradec Králové in the future. Based on the questionnaire research conducted in the towns 20 min-

utes distant from Olomouc (according to journey planner www.skoda-auto.cz), we delimitate the catchment region into the three shopping centres mentioned. In every town, a sample of at least 10% of inhabitants took part in the research. Univocal

catchment was achieved when at least a half of respondents agreed on it. When the superiority was not so clear, the catchment was divided into two shopping centres which were chosen by at least one third of respondents.

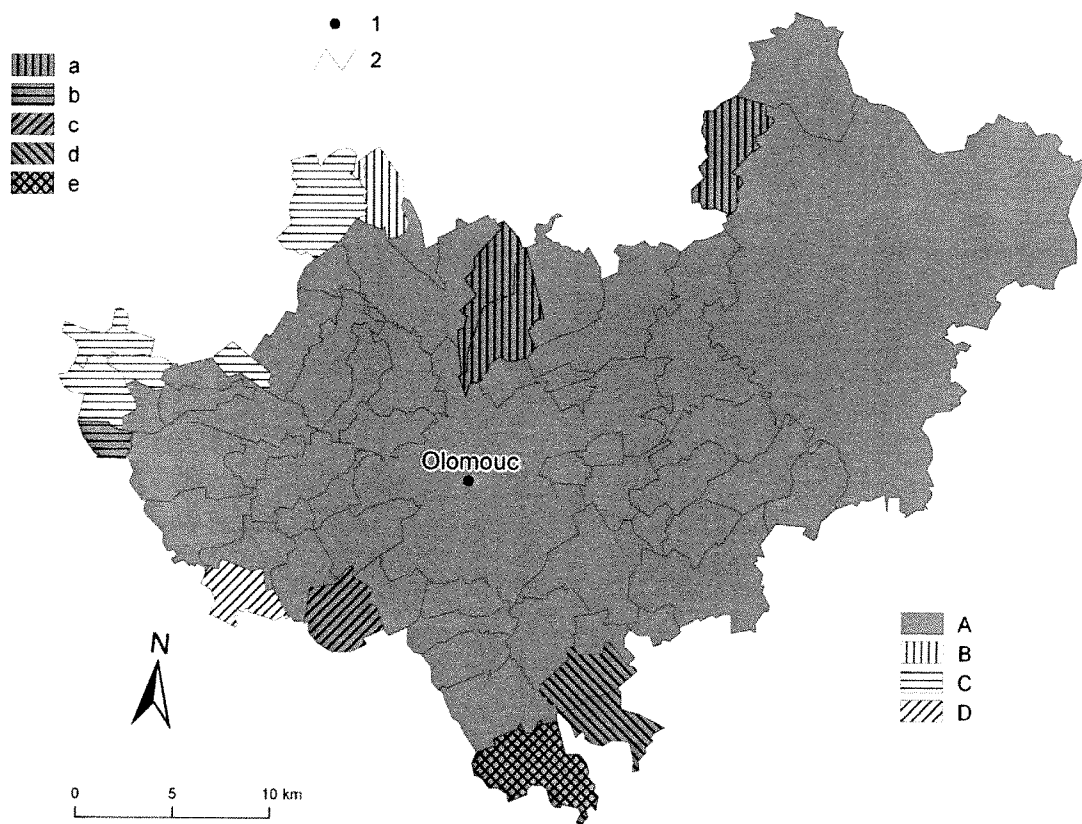


Fig. 6. Regions of retail and services on the micro-regional level in DUS Olomouc

Explanation: 1 – centre of micro-regional level; 2 – border of municipality; catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Prostějov; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Prostějov; d – Olomouc / Přerov; e – Olomouc / Prostějov / Přerov

Source: Own research

Globus has the largest, according to size as well as according to population, hinterland in towns outside Olomouc; in contrast, the smallest hinterland is that of Haná, which has to compete with the nearby shopping centres of Prostějov to the south-west. We also noticed the dependence of shopping centre preference and distance, but only at lower distances. If the centre is located less than 8 km from a town, its inhabitants always prefer this centre. In towns which are more distant from the closest shopping centre (more than 8–10 km), the role

of distance is not important because inhabitants decide according to other criteria. The greatest diversification of preference is in municipalities located to the northeast of Olomouc, where no shopping centre can be found. It is an area without highways in the pleasant natural surroundings of Níz-ký Jeseník and Oderské vrchy, where also for these reasons intensive suburban processes have taken part since 2000. Fig. 7 shows a detailed description of spatial differentiation of shopping centre preferences.

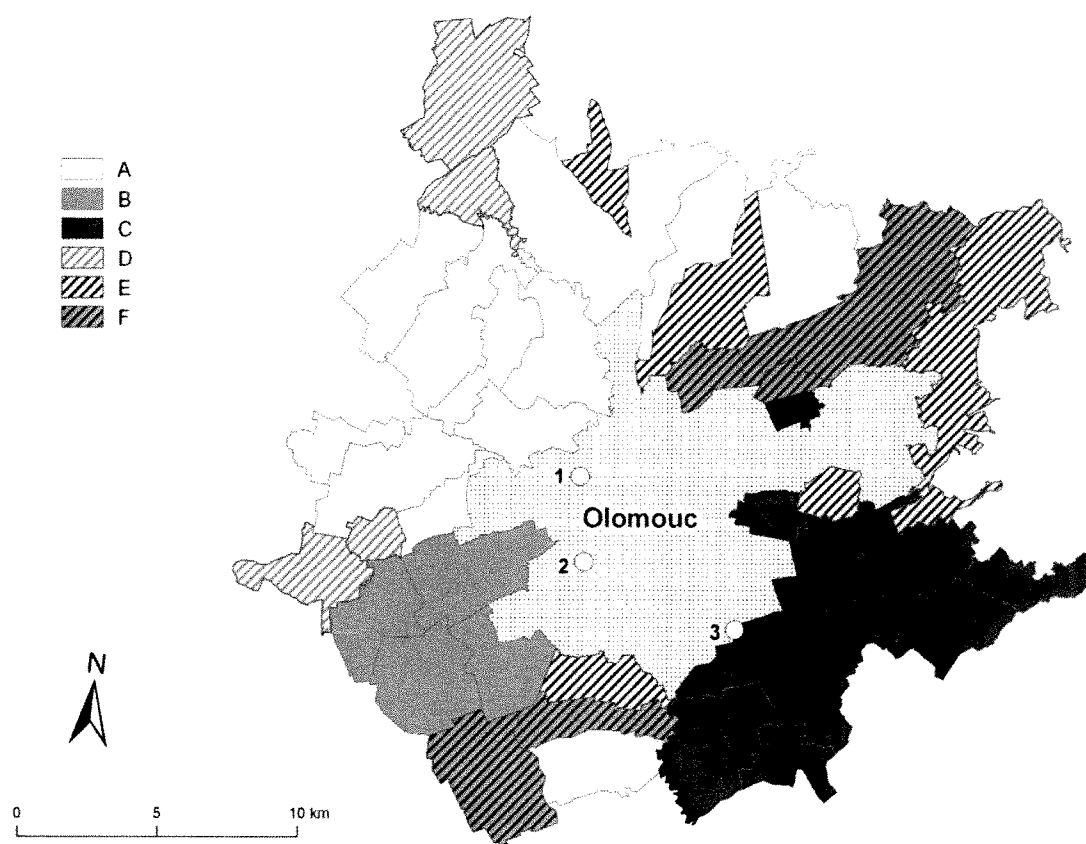


Fig. 7. Travelling to shopping centres from municipalities in Olomouc hinterland

Explanation: shopping centre: 1 – Globus; 2 – Haná; 3 – Olympia; catchment area of shopping centre: A – Globus; B – Haná; C – Olympia; D – Globus / Haná; E – Globus / Olympia; F – Haná / Olympia

Source: Own research

3.4. Accessibility of culture and sports

Culture and sports commuting regions have not been defined so far in the Czech Republic. Questions determining commuting to cultural and sports events, clubs and cinema were included in the questionnaire. All questions were related to the local level according to the methodology chosen, except for cinema commuting. The sole cinema commuting belongs to the micro-regional level and its travelling network will not be presented in a map here. In the case of cinema commuting, the whole area travels to Olomouc, with the exception of 5 municipalities travelling to Litovel, one travelling to Šternberk and one to Prostějov. Cinemas belong to the cultural amenities that spatially waned significantly – in the MEP Olomouc its number was lowered to one third compared to 1989 (Szczyrba et al., 2006). Also

their diversity was decreased as most of them were moved to so-called “consumption centres” within large shopping centres. Even in the thousand-inhabitant city of Olomouc itself only one non-multiplex cinema remained in operation.

Two centres of culture and sports were delineated on the local level using the chosen methodical procedure – Olomouc and Přáslavice. Similarly to the previously mentioned partial regions, the influence of the surrounding cities (namely Litovel, Šternberk, Moravský Beroun, Přerov and Prostějov; Fig. 8) was manifested in the case of border municipalities. The birth of the travelling centre of Přáslavice points to the different nature of the service processes of free time activities. Municipalities of Hlubočky (several times larger than Přáslavice) and Mrsklesy declared their travelling preference to Přáslavice. There is not only one single dominant activity in Přáslavice, but a new multifunctional centre was built there in 2009

and locals are active in, for example, floor ball or fitness. Other delimited regions more or less fol-

low the travelling pattern set by commuting to retail and services.

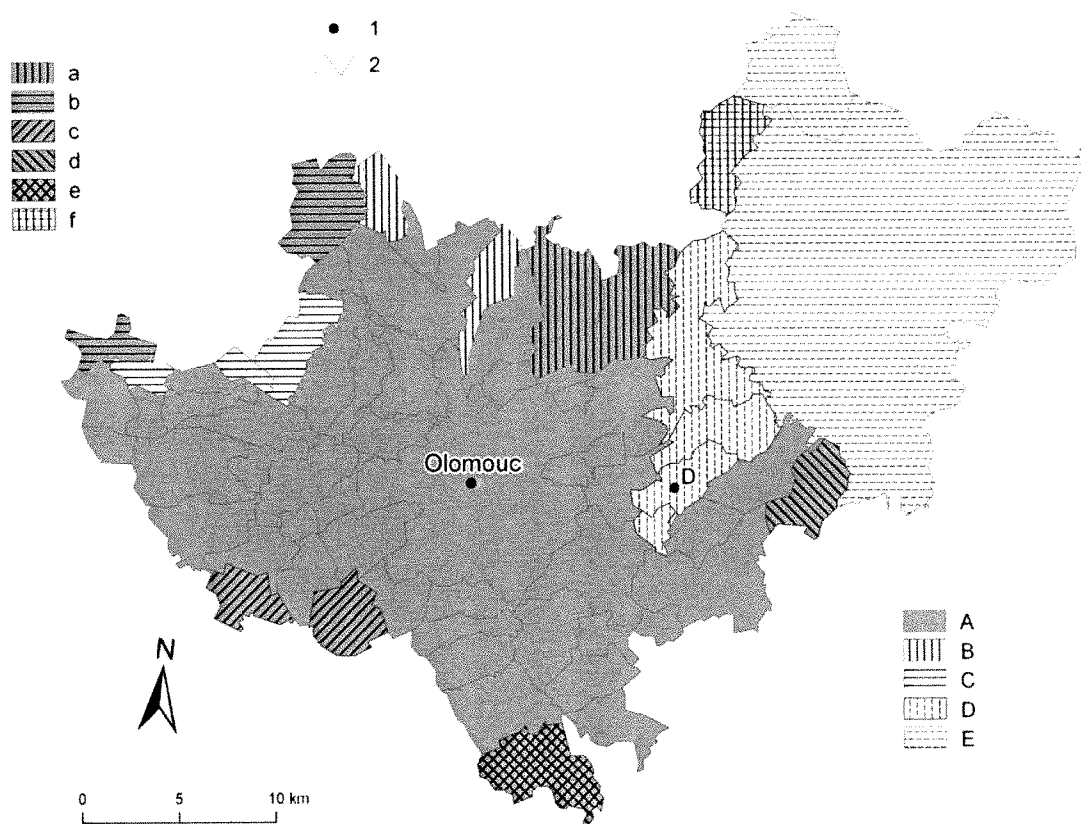


Fig. 8. Culture and sports regions on the local level in DUS Olomouc

Explanation: 1 – centre of local level; 2 – border of municipality; centre, catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Přáslavice; E – Moravský Beroun; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Prostějov; d – Olomouc / Přerov; e – Olomouc / Prostějov / Přerov; f – Šternberk / Moravský Beroun

Source: Own research

3.5. Complex accessibility of services and amenities

Although Hampl (2005) declares his regionalisation of the area of the Czech Republic as a complex socio-geographic regionalisation and delineated regions as complex micro-regions, meso-regions and macro-regions, he worked only with data on work commuting. Service commuting was substituted by school commuting, which concerns only strictly age-limited population groups and often has a different direction from overall commuting. Service commuting, both real and model, is taken into account in the previous works of the Hampl team, though the map output from Maryáš and Řehák

(1987a) in the Atlas Obyvatelstva ČSSR may be considered to be the most complex regionalisation work. The service travelling network in the hinterland of Olomouc will be formulated in general as a synthetic summary of a single partial travel network for the analysed service areas in the conclusion of this study.

The dominant position of the central city of Olomouc and its regular coexistence with surrounding centres (e.g. Přerov, Prostějov, Litovel, Šternberk or Moravský Beroun) is clearly confirmed in the daily urban system of Olomouc. We also notice a fairly high concordance rate with the daily urban system delimitation itself, which was delimited based on the most frequent and numerous kind of travelling – work commuting. The synthesis confirms that in

the hinterland of such a large city as Olomouc there is no great difference in service region delimitation on the local and micro-regional level. The regions delimited differ only in one part (Fig. 9, 10) – on the local level Libavá (2) and Norberčany belong to Moravský Beroun, while on the micro-regional level Moravský Beroun does not create an independent region and thus Libavá and Norberčany oscillate between Olomouc and Šternberk. On the local level, there are also some minor centres but only in partial processes. Their greater complexity, as far as the offer of services is concerned, was not confirmed.

Out of 63 municipalities in the region, on the micro-regional level nine of them travel to services outside Olomouc – four of them to Litovel (Bíl-sko, Dubčany, Loučka and Pňovice), four of them to Šternberk (Domašov nad Bystřicí, Strukov, Štarnov and Žerotín) and one to Prostějov (Slatinky). Four towns oscillate between the influence of Olomouc and Litovel (Náklo, Olbramice, Příkazy and Vilémov), two towns between Olomouc and Šternberk (Libavá and Norberčany), one town between Olomouc and Prostějov (Olšany u Prostějova) and two towns between Olomouc and Přerov (Majetín and Věrovany).

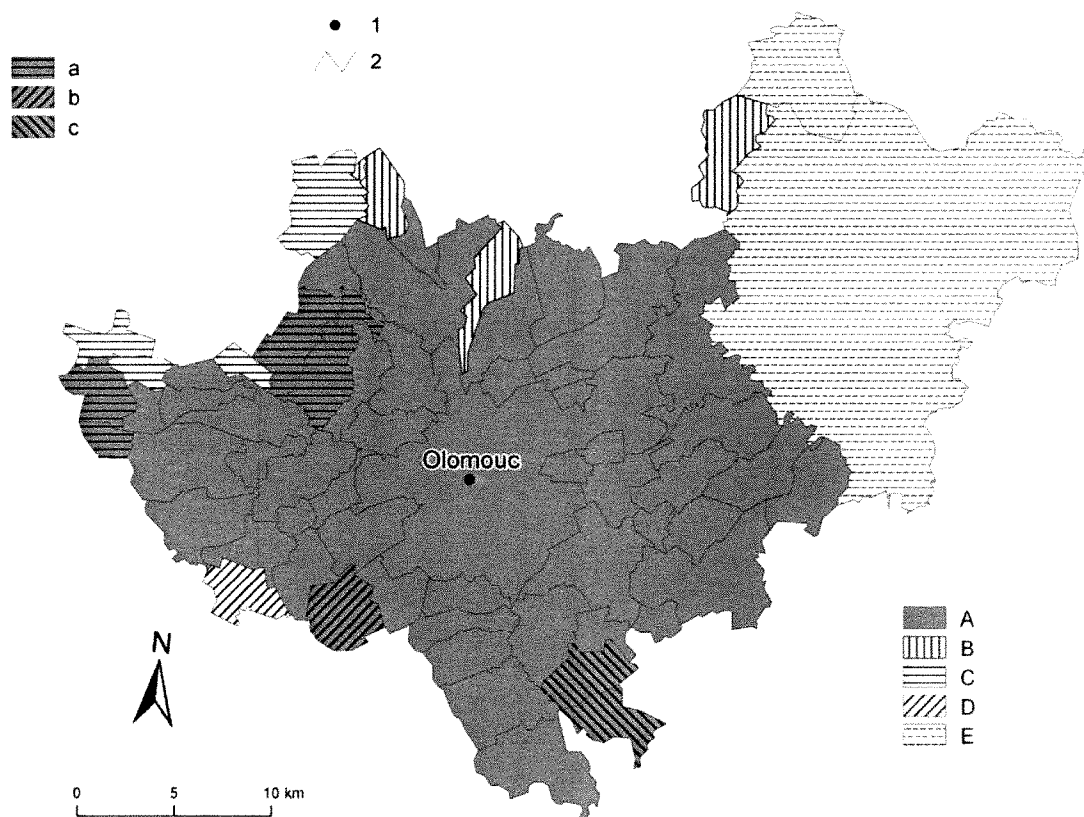


Fig. 9. Complex service regions on the local level in DUS Olomouc

Explanation: 1 – centre of local level; 2 – border of municipality; catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Prostějov; E – Moravský Beroun; a – Olomouc / Litovel; b – Olomouc / Prostějov; c – Olomouc / Přerov

Source: Own research

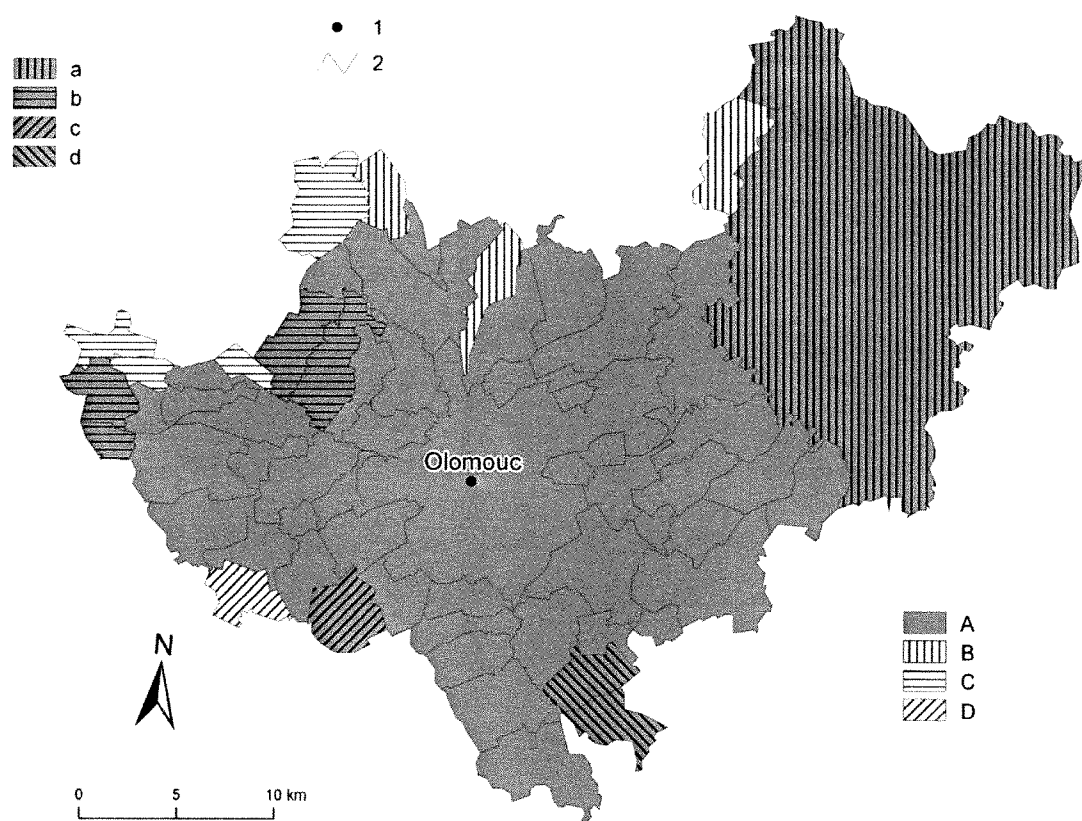


Fig. 10. Complex service regions on the micro-regional level in DUS Olomouc

Explanation: 1 – centre of micro-regional level; 2 – border of municipality; catchment area: A – Olomouc; B – Šternberk; C – Litovel; D – Prostějov; a – Olomouc / Šternberk; b – Olomouc / Litovel; c – Olomouc / Prostějov; d – Olomouc / Přerov

Source: Own research

4. Conclusions

Services commuting analysis in the daily urban system of Olomouc confirmed some basic tendencies of service sector development in the transformation period. Above all, the development of public and commercial services was different. Commercial services gradually adapted to the demand, which means mainly an improvement in the amenities (and thus a decrease in the distance of commuting) of larger towns in the hinterland of Olomouc – mainly pharmacies, basic services facilities, banks and insurance companies. In contrast, clothes and footwear shopping was transferred to large commercial centres, where also basic food shopping was relocated in most cases. Groceries of different sizes remained in all towns of the region; however, in some cases there are only corner shops and small-scale local shops with a limited range that does not

reflect the size of the municipality (e.g. in Bystrovany).

Fewer changes were introduced within the educational and health facilities network in the region. The overall organisation of the location as well as the size structure of the municipalities provides a reasonable probability for all these locally or regionally governed facilities to be maintained and used by the population of the region in general, as well as by minorities. The primary schools network and commuting to these schools determines the most diversified system of regions on the local level. In the public services there might theoretically be a sort of risk connected with commercial sector entry into the hospitals of neighbouring regions (Šternberk, Prostějov, Přerov) – predominantly the risk of basic healthcare substitution for commercial and more profitable health services.

During delimitation of complex service regions, exactly in the relationship of the travelling region

of Olomouc to oscillating regions, we observe their strong similarity compared to MEP delimitation. In contact with Prostějov, Přerov and Šternberk the relationship is almost in concordance. In contact with Litovel, three municipalities from MEP Litovel were registered (Senice na Hané, Senička and Střeh) that were absorbed by the service influence of Olomouc. In contrast, the service commuting of the municipality of Příklad from MEP Olomouc oscillates between Olomouc and Litovel municipalities. In general, the complex service region of Olomouc comprises 160,000 inhabitants. Out of 45 municipalities, two have the status of a city – Olomouc and Velká Bystřice. The region-creative significance of Velká Bystřice was not manifested in the service sector due to its border position next to the military training area of Libavá. Except for Olomouc, the most important employers in the region are Mora Moravia s.r.o. Hlubočky and Sigma Group a.s. Lutín. Even though both municipalities are rich in population (4,400 inhabitants and 3,200 inhabitants) neither of them has manifested itself as the key service centre in the region.

The city of Olomouc forms a dominant nucleus of the studied area where local administration, service facilities of the micro-region and the majority of job opportunities are concentrated. In addition, more than 60% of the service region inhabitants are concentrated there. The rest of the area cannot have any ambition to compete with the travelling power of Olomouc, but due to a reasonable infrastructure takes the advantage that this proximity provides instead. At the same time, as a source of labour force, traditional agricultural production and relaxation opportunities it creates a city hinterland. Positively, in the larger municipalities the service facilities are maintained, in the easily accessible surroundings of the border areas other micro-regional centres are located and thus the phenomenon of so-called inner-periphery scarcely occurs in the region.

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Notes

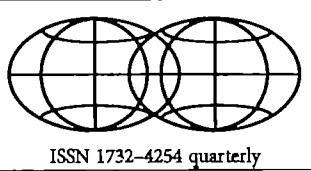
- (1) In order to make map 3 clearer, a different cartographic method was used than in other maps.
- (2) In the case of the town of Libavá we are talking about the independent town, and not about the whole military training area.

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Features of a migration region – an analysis using the example of the Opolskie Voivodship

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Abstract. The authors of the article develop the concept of a migration region. The experiences of the Opolskie Voivodship in the sphere of external migration function as a field of reference. The issues connected with the factors preconditioning the formation of such a region are of utmost interest to the authors.

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1. Introduction

The notion of a *migration region* was used for the first time in relation to the Opolskie Voivodship

(1) (Heffner, Rauziński, 2003) due to the fact that it has certain interesting features characteristic of the external migration and it occupies a specific place on the migration map of the country. The research

conducted so far indicates that this area definitely belongs to the most important migration regions in the country, and it is not only because of the high level of migration, which is, in certain periods, even a mass-scale one (2) (Fig.1). Departures abroad, which were initially permanent and at present are rather of a temporary character, have been observed here ceaselessly at least since the 1950s, thus influencing the shape of the social processes in the region and creating certain dysfunctions in the sphere of demography and economy on numerous occasions (Fig. 2). Until recently, emigration from the Opolskie Voivodship was of a unique character in comparison with the rest of the country and applied solely to the native people of Silesia having a double citizenship (Polish and German). Since the accession of Poland to the European Union structures and the moment the European labour markets were open, the ethnic context of the phenomenon has not been that clear any more, however, the conse-

quences of migration are still most noticeable in the region in the economic and social spheres. The migration experiences allow referring them to the developing *concept of a migration region*, first of all on the basis of the circumstances facilitating the delimitation of this type of areas, as well as features characteristic of migration regions.

The problems connected with the development of a migration region in the socio-economic sense are considered from the viewpoint of migration abroad; from the spatial perspective it is an administrative division unit of a country (in Poland, on a regional level – NUTS 2 – *Voivodship*). In literature on demography, economy or regional politics a migration region is defined in various manners, within the meaning of the covered area, for example as parts of continents (e.g. South-East Asia), as individual countries (e.g. Mexico) or their parts – regions (e.g. North Rhine-Westphalia in Germany, see: e.g. Brettell, Hollifield, 2000; Geddes, 2003).

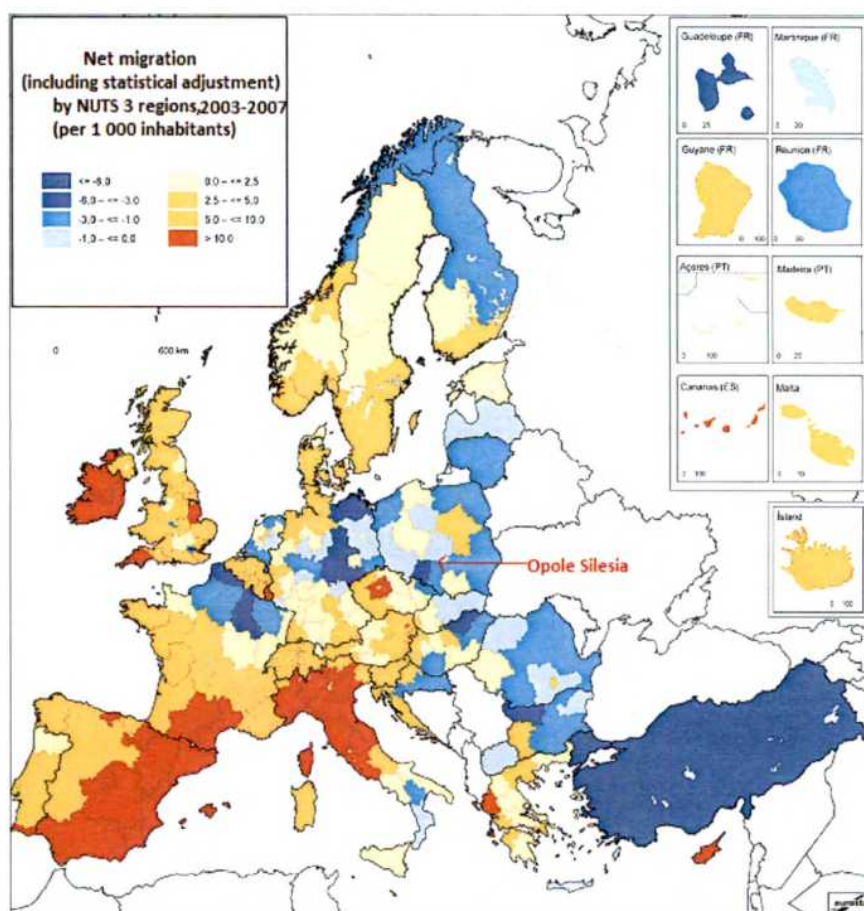


Fig. 1. Net migration by NUTS 3 regions, 2003–2007

Source: Eurostat Regional Yearbook, 2009, Luxembourg: Office for Official Publications of the European Communities. DOI: 10.2785/17776, p. 20

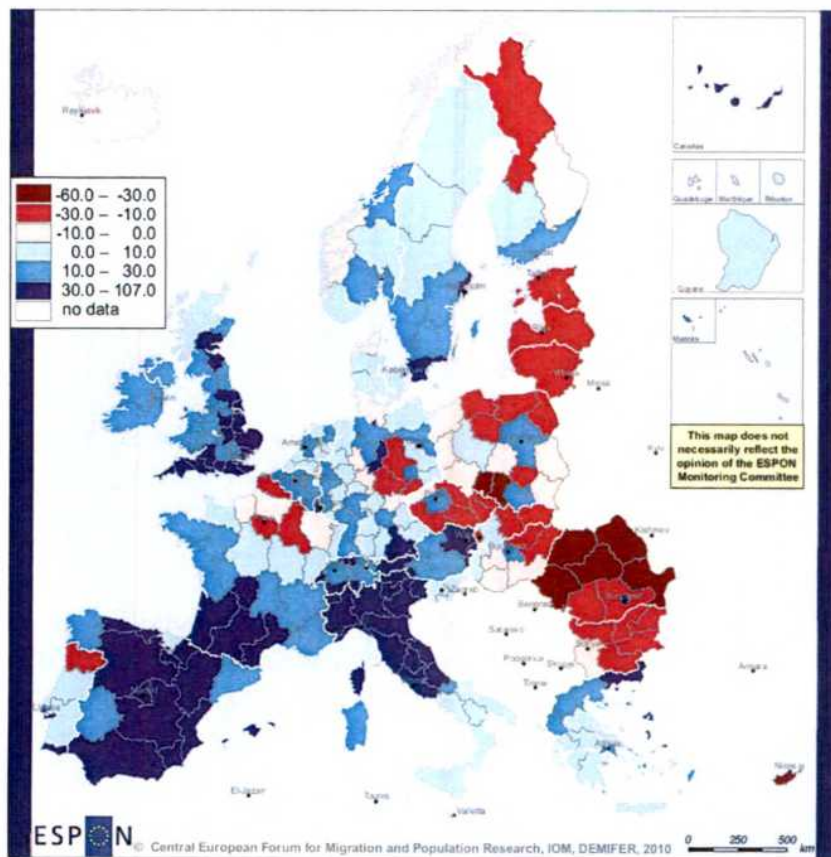


Fig. 2. Impact of migration on population in 2050 – calculated as the difference between the *Status Quo* and *No Migration scenarios* in percentage of the population in the *No migration scenario*

Source: Impact of migration on population change. Results from the ESPON DEMIFER Project, http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/DEMIFER/demifer_PB_migr_impact.pdf

Here, a migration region is defined as a regional unit (usually NUTS-2) where an impact of external migration on the regional development is long-lasting and permanent, the share of migrants in the local and regional population (or regional labour market) exceeds 10%, and with remittances (money transfers) from migrants, their entrepreneurship and will to return being of significance for the demographic behaviour of the regional population and the economy of the region.

2. Research on external migration in regional systems

The issues connected with the influence of migration on the development of the outflow regions

have so far been raised less frequently than the studies concerning the situation of migrants in the target regions. Such a situation is due to the fact that the research of migration was concentrated on More Economically Developed Countries (MED-Cs), which were long ago transformed from emigration countries into the ones facing a problem of the excessive inflow of immigrants. In connection with the above, the issues of adaptation and integration of the foreigners were the first and foremost subjects of these analyses (Luft, 2011), sometimes also the economic aspects of immigration, and the significance of external workforce in the economy of the target regions in particular (Bauer, 1998; Leicht, 2005). The systematic increase of interest in the outflow regions could be noticed at the beginning of 1990s. Since then, there has been a constant growth in the number of elaborations

whose authors are trying to determine the importance of the earnings sent from abroad for the migrants' families, local communities and frequently the entire country as well. What is being analysed, at the same time, are the changes in demographic and labour market situations due to the fact that people leave the country for work, as well as the socio-cultural aspects of emigration. Along with the intensification of international migration of economic character, the dependencies between the development of the outflow regions and emigration are becoming more and more distinct (Entwicklung durch..., 2006/2007: 102–128). The conceptions of the regional development have been elaborated as well. It has been established that as a result of the evolutionary characteristics of migration, the fact that highly qualified people or people having specific professional experience and making use of their networks of professional contacts leave the country and then come back, may have a positive influence on the dynamics of the economic development of the outflow regions (Fromhold-Eisebith, 2002: 21–43). Consequently, the significance of utilitarian researches which include recommendations for the regional politics in emigration areas is thus growing (Massey et al., 1993: 431–466; Brettell, Hollifield, 2000).

In Poland the scientific achievements concerning contemporary external migration are quite substantial (Kicinger, Weinar, 2007). The increase in the number of research in this scope was first observed after the political and economic changes started in 1989 and then owing to the accession of Poland to the European Union (EU) in 2004. There exists an extremely wide range of issues connected with the factors shaping migration both in the international aspect and in the scope of individual reasons for migration. The analyses of this kind are frequently presented within the framework of the theory of push and pull factors, which is commonly applied in the research of migration. The research concerning economic, demographic and cultural effects of external migration, both from an individual perspective and on the level of particular regions and the entire country, is of great significance (Kaczmarczyk, 2005). The research concerning return migration of the Poles is systematically developing (Heffner, 1999: 168–205; Iglicka, 2010). The same refers to the issues connected with emigration and

multiculturalism as well as the integration of foreigners in the view of the increasing importance of the inflow of foreigners to Poland (Górny et al., 2010). Also, the migration policy, which was raised as early as at the beginning of 1990s, is a significant theme of the analyses.

There are not many regional perspectives in the series of numerous scientific analyses dealing with the issues of external migration. They concern first and foremost the traditional migration regions, which in Poland are to be found in Opole Silesia, and the Podlaskie and Podkarpackie Voivodships. These areas have a long-standing history of emigration as well as peculiar features of this phenomenon. Each of these areas is characterised by the distinct patterns of external migration, which are still maintained today although in somewhat altered conditions. It should be noted that in connection with the accession to the EU and a large scale of emigration of the Poles, the interest in the issues of external migration has increased significantly in the remaining regions. As the regional context of migration processes is gaining a new meaning, it may be supposed that the contemporary migration and its results will be a subject of a growing interest for regional politics (Heffner, Solga 2008; Zmieniająca się rola..., 2009).

3. Features shaping a migration region

3.1. Scale and permanent character of migration

Migration regions are characterised by long traditions of migration and its significant scale. This leads to a permanent depopulation of these regions, which has certain social and economic consequences.

Migration in Silesia has a long history, which started as early as in the 1850s. The emigration reached a considerable size in this region, which was a direct consequence of the developments of World War II and the following determination of the new borders of Poland. The expulsions at that time, which concerned the German population living in the region, affected more than 200,000 people. Later, in 1950, the action of reuniting families was commenced thanks to which the clos-

est relatives, and later even the more distant ones, were able to leave for one of the German states. With time, this action assumed a broad character – it encompassed 6,600 people until 1955 and further 52,000 until 1959 (Rauziński, 2010). Since the 1950s, these were mainly the native people of Silesia who participated in external migration. In total, over 200,000 people emigrated by the end of the 1990s (Table 1). Presently, it is estimated that the scale of permanent and suspended emigra-

tion (definite migration of people who have not notified the authorities about the change of their address) in the Opolskie Voivodship amounts to about 105,000 people (National Census 2002), whereas external economic migration (temporary and seasonal) amounts to 115,000 (Jończy, 2010). About 34,000 people who earn their income abroad belong to the native inhabitants of Silesia with a double citizenship, while 81,000 are exclusively Polish.

Table 1. Permanent emigrants during characteristic phases of migration in 1950–2009

Years	A	
	a	b
1951 – 1960	60,578	25.6
1961 – 1970	25,252	10.7
1971 – 1980	50,914	21.5
1981 – 1990	37,464	15.8
1991 – 2000	27,327	11.5
2001 – 2005	20,479	8.6
2006 – 2009	15,079	6.3
Total	237,093	100.0

Explanation: A – permanent emigrants; a – number; b – percentage

Source: Own calculations based on the data of the Opole branch of the Central Statistical Office and statistical year-books

According to the estimates, migration to Germany caused a decrease in the share of the Silesian population in the total population of the Voivodship from 52.5% in 1950 to 37.6% in 1977. Over the years 1976–2008, the relation of the number of permanent emigrants to the birth rate amounted to 67.4% on average in urban areas and even 90.9% in rural areas. This concerns the birth rate of the total population of the Opolskie Voivodship. The permanent migration, on the other hand, encompassed the total birth rate of the local Silesian population – the main participant of this migration. In numerous urban and rural gminas (3) of the Opolskie Voivodship external migration significantly exceeded the birth rate (4).

The scale of migration in the Opole region was very high throughout the period of the systemic transformation. At the same time, the negative indicator of the migration balance differed considerably from the average for the whole country.

It should be stressed at this point that the level of permanent migration decreased during that time, while the number of temporary and seasonal economic migration significantly increased. A very high level of external migration (exceeding 8% of the population) is at present characteristic of numerous urban and rural gminas located in the central and eastern parts of the Opole region inhabited by the native people (5). As it is indicated by the research (Heffner, Solga, 2008a), a decrease in the number of emigrants and an increase in returning migrants may be expected for the region. However, this will depend on the economic development both in Poland and in Europe within the context of the present economic downturn. This is confirmed by the analyses of the external migration balance indicating that the present migration potential of Opole Silesia is becoming gradually exhausted (Fig. 3), which can be observed mainly in the rural areas and, to a lesser extent, in

urban areas. On the other hand, the number of emigrants from the west and north parts of the region (inhabited by the people not holding the German citizenship) increased after 2004, especially from urban areas. The conducted research indicates a different structure of emigration from these

parts of the Opole region as far as the reasons, migration patterns and social and demographic features of emigrants are concerned. Taking the above into consideration, an unfavourable development of trends concerning the return of migrants to the Opole region can be expected.

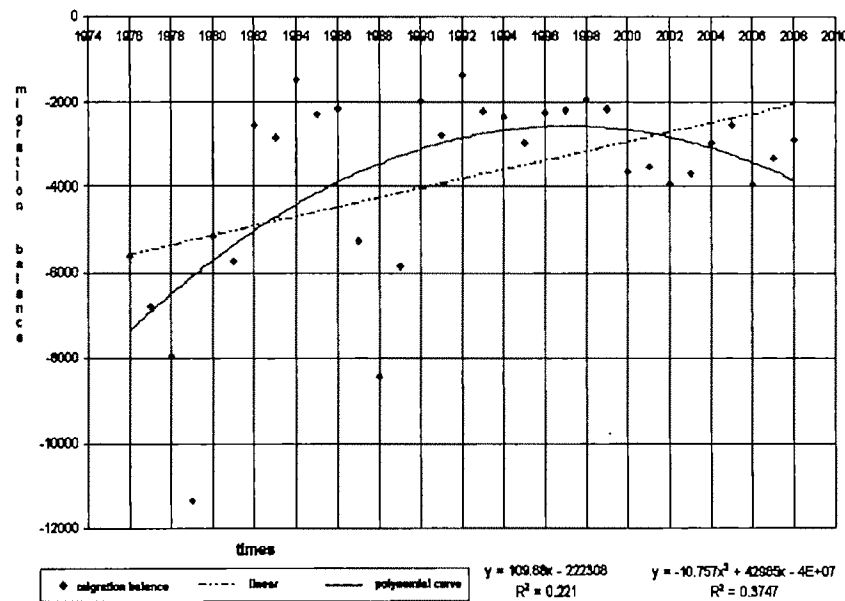


Fig 3. Migration balance for the Opolskie Voivodship in 1976–2008

Source: Elaboration and calculations P. Gibas and K. Heffner (2011)

3.2. Conditions and traditions of migration

What underlies mass migration in a migration region is not only the typical conditionings of contemporary migration, that is the social and economic gap between the home country of the emigrants and their target destination, but also additional circumstances exerting a significant impact on the shape and scale of migration processes. Certain formal reasons e.g. the policy of the immigration country or, as in the case of the Opolskie Voivodship, a double citizenship permitting its holder to stay abroad legally, can be counted as such conditionings. Undoubtedly, well developed, dynamic and extensive migration networks, as well as long established migration tradition may also initiate and then support emigration from the region.

Such regional conditionings exist in Opole Silesia. They stem from the historical traditions con-

nected with undertaking seasonal work in Germany, post-war migration related to the expulsion of the German population living in this area, mass migration of the Silesian population, and present permanent or seasonal migration of the inhabitants of the region.

What is characteristic of external migration in the Opolskie Voivodship is the fact that since the accession to the EU in 2004, only the native Silesian population has participated in it because it has had the opportunity to undertake legal work in the countries of Western Europe. These people could work legally in Germany and in other countries of the European Union even before the accession because, under the German law, they were allowed to hold both Polish and German citizenship (Fig. 4). The particular feature of this migration was its free character and the fact that it followed the rules similar to the EU regulations concerning internal labour flows.

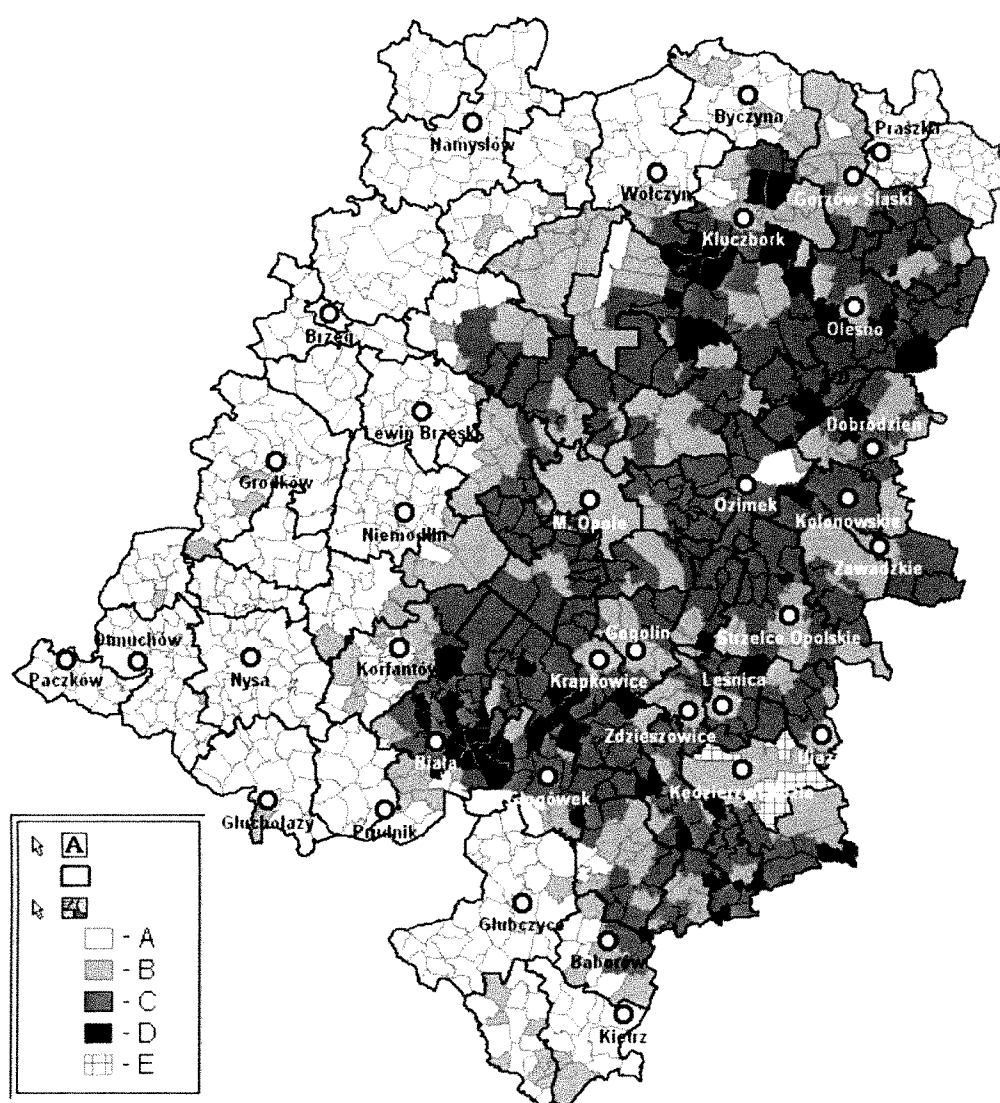


Fig. 4. Percentage of German population in the Opolskie Voivodship according to the Population Census 2002

Explanation: A – < 1%, B – 1.1 – 20%, C – 20.1 – 50%, D – > 50.1%, E – no value, M – city

Source: Szczygielski, K., 2010: *Przestrzenne zróżnicowanie ludności województwa opolskiego w kontekście etnicznym jako potencjalne uwarunkowanie rozwoju regionalnego* (Spatial diversity of the population of Opole Silesia in the ethnic context as a potential conditioning of regional development – in Polish), Opole: Politechnika Opolska, PIN – Instytut Śląski w Opolu, p. 145

Therefore, a double citizenship is the factor that has had a significant influence on the size, character and scale of external migration in the Opole region. The data from the National Census 2002 concerning German citizenship declared by the inhabitants of the Opolskie Voivodship confirms a broad scope of this phenomenon. While the regional distribution of the population according to a double citizenship is practically regular throughout the country, the Opole region is exceptional in

this field. The percentage of people holding solely the Polish citizenship is the lowest here (858,500 people, i.e. 80.6%), whereas the share of people holding a double citizenship, i.e. Polish and of any other country, is the highest (157,800 people, i.e. 15.7%), including, first of all, those with Polish and German citizenships (154,100, i.e. 15.4%). The fact that there is a clear spatial dichotomy of the distribution of the people holding a double citizenship in the region is a characteristic feature of the

situation. Along with the gminas inhabited mainly by the immigrant population, in which the phenomenon of a double citizenship does not occur or its scale is insignificant, there are gminas where the native people holding a double citizenship constitute the straight majority. They are situated in the traditional migration region in the central and

eastern parts of the Opolskie Voivodship. This situation cannot be found in any other part of the country because only here there are villages where the number of people with a double citizenship is higher than the number of people being solely Polish citizens (Kymlicka, 2003: 195–208; Solga, 2011, 192–202).

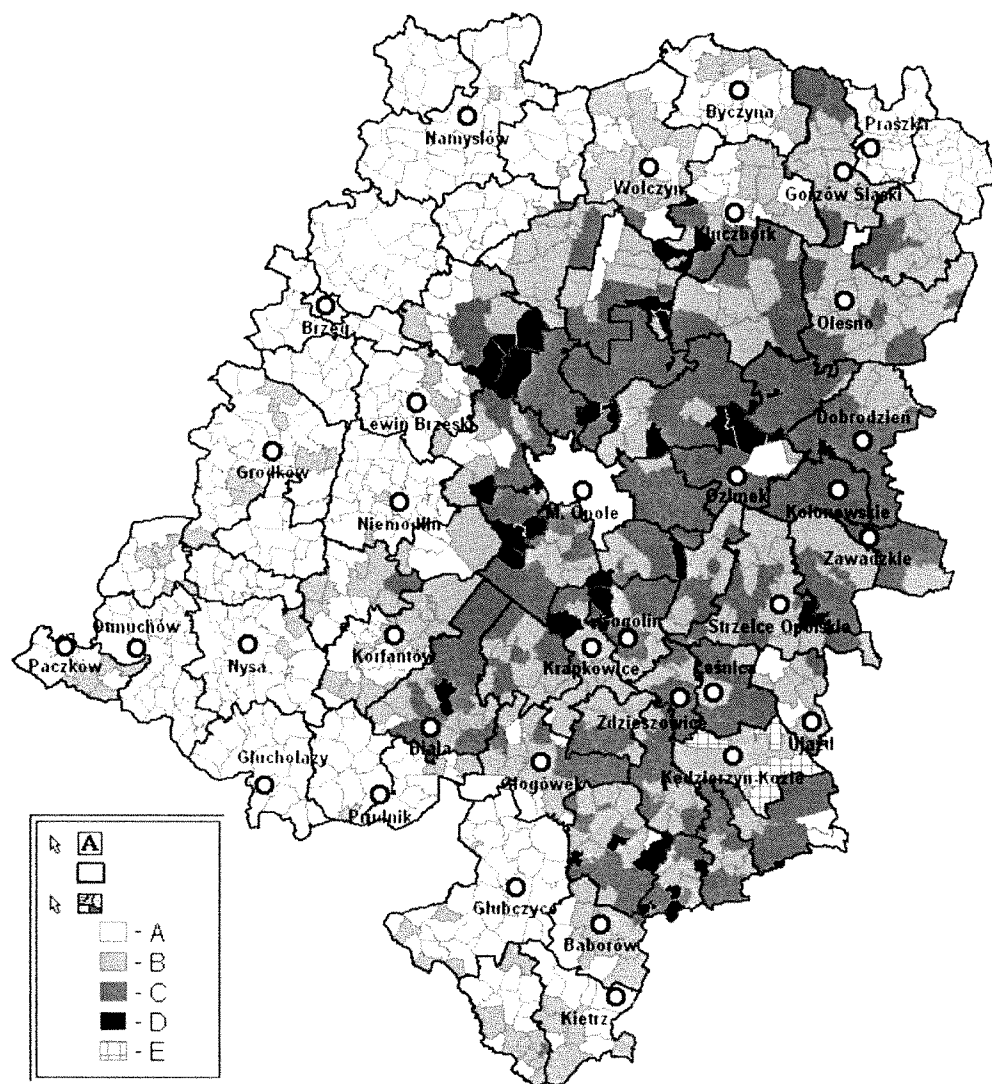


Fig. 5. Percentage of long-term emigrants in the Opolskie Voivodship according to the Population Census 2002

Explanation: A – < 5%, B – 5.1 – 15%, C – 15.1 – 25%, D – > 25.1%, E – no value, M – city.

Source: Szczypiński, K., 2010: *Przestrzenne zróżnicowanie ludności województwa opolskiego w kontekście etnicznym jako potencjalne uwarunkowanie rozwoju regionalnego* (Spatial diversity of the population of Opole Silesia in the ethnic context as a potential conditioning of regional development – in Polish), Opole: Politechnika Opolska, PIN – Instytut Śląski w Opolu, p. 167

These circumstances influenced the emergence of a pattern of external migration which is of interest in the context of the entire country. It is due to the development of so called migration monoculture in the Opole region that is ethnically pre-conditioned (primarily by the immigration policy conducted by Germany towards so called ethnic Germans), almost solely unidirectional emigration of the local Silesian people which has been continuing ceaselessly and on a large scale since the early 1950s. Moreover, the outflow concerns mainly the gminas from the central and eastern parts of the Opolskie Voivodship thus influencing the characteristic dichotomous spatial pattern of migration (Fig. 5). After the accession of Poland to the EU and the opening of labour markets by the EU member states, also the group of inhabitants of Opole Silesia (immigrant population) that until then participated in migration to a relatively small degree, in comparison with the Silesian people, gained broad opportunities for finding jobs. The above situation made the ethnic context of migration in the Opole region not as obvious as it was before 2004, although still of an essential and determining character for migration processes in the region. As it was already mentioned, the new post-accession migration differs to a considerable extent from the previous one. Within this scope, an essential change took place in the structure of migrants, patterns and directions of migration as well as its most important reasons. The new, post-accession emigrants are better-educated young people without experiences related to unemployment and often without any experience on the Polish labour market (Fan, Stark, 2007: 76–87).

3.3. Migration networks

The networks of migration links play an important role in the process of creating a migration region. They make external migration a social process gradually embracing local communities and groupings of emigrants from these communities. Owing to the links of this type, both permanent and temporary migration become much easier than in the regions that did not form so broad and effectively functioning migration networks. Additionally, they create grounds for shuttle traffic of emigrants – former inhabitants of the region who, although

already well established abroad, have not lost the connections with the region of their origin and constitute a strong, actual or future support for further emigration.

The functioning of a migration process with a permanent and quantitatively significant character in Opole Silesia was possible, to a considerable extent, owing to the existence of a well established, effective and dynamic network of migration links, which evolved among the inhabitants of the Opolskie Voivodship and West European countries (mainly Germany) as a result of continuous emigration. The networks of migration links similar to the one present in the Opolskie Voivodship can also be found in other parts of the country (e.g. the Podlaskie and the Małopolskie Voivodships); however, they are not as well developed and wide-ranging as in Opole Silesia. It is estimated that per each 100 people living in the Opolskie Voivodship there are 120 of their relatives living in Germany. Numerous scientific researches confirm (6) that in spite of an increasing economic mobility of Poles, the inhabitants of the Opole region are still best prepared to support the permanent character of the network of links.

3.4. External migration as an important determinant of regional development processes

Socio-demographic and economic phenomena accompanying migration are extremely complex in a migration region, both from the spatial and political point of view. The mass and permanent character of migration brings about certain demographic, economic and socio-cultural consequences, which are both positive and negative (Heffner, 2008: 147–168). Migration and its results is one of the major factors directly influencing the developmental possibilities of such a region.

First of all, mass emigration may cause serious demographic imbalances. Such an impact may be complex and manifest itself in the reduction of the birth rate, decrease in the number of children per family, distortions of the population age and sex structure, ageing of the society, decrease in the number of contracted marriages, disintegration of families and weakening of social links. Migration

becomes the principal factor disturbing the natural movement of the population and accelerating the demographic crisis. When external migration is not compensated by the internal inflow, the permanently negative migration balance may weaken the demographic structure of a migration region, which causes escalating problems on the labour market, deformation of the regional socio-economic structure as well as a definite reduction of its developmental possibilities (cf. Rovolis, Tragaki, 2008). Therefore, this situation poses a significant threat for the further demographic and socio-economic development of such regions.

In this context, it is estimated that from the point of view of the demographic situation, Opole Silesia has reached its limit of emigration capacity. The unfavourable level of the migration balance combines with other, equally negative, demographic indicators, such as the number of children per family, fertility, gross reproduction and demographic dynamics (7). As a consequence, these problems lead to a decrease in the population of the region, which exerts an unfavourable impact on its present socio-economic development. The demographic forecasts are not favourable either in this context. It is estimated that the population size will drop by about 140,000 by 2035 (as compared to 2007) (Population forecast for the years 2008–2035). A further significant reduction of the population size of the Opolskie Voivodship makes the region face the danger of a demographic disaster.

On the other hand, mass emigration may have a positive influence on the reduction of the unemployment rate in migration regions. In the Opolskie Voivodship, from where a certain group of inhabitants (native Silesians) emigrated for many years, this influence is clearly visible in the form of a lower unemployment rate in the gminas inhabited predominantly by this population (Heffner, 2006: 259–272). It turns out, however, that the scale of external migration exceeding the level of unemployment in a region may reduce its stimulating impact, because the reduction of unemployment is not necessarily accompanied by a simultaneous increase in the employment and economic activity. The considerable engagement in migration processes on the part of the inhabitants has an adverse effect on the development of small and medium enterprises in the Opolskie Voivodship as a possibility of finding a well paid

job abroad does not induce them to take up the risk of running a small business at home. Although migration contributes to the increase in the financial potential of the population of a migration region, which in the case of the Opolskie Voivodship means mainly an increase in the investments in individual ventures improving the standard of living and social prestige, it is poorly related to the development of entrepreneurship as far as investing the emigrants' incomes in small and medium businesses (Solga, 2008: 130–139). This means that migrants in a migration region may be less inclined to take up the risk related to running an enterprise and easily accept the continuation of external temporary migration. It is estimated that in the Opolskie Voivodship, where in spite of the fact that certain positive changes in the dynamics of the number of new business entities (8) have been recently observed, the problem of low entrepreneurship still constitutes a developmental barrier. It has also emerged that a negative impact of migration on a permanent withdrawal of migrants from labour market has been confirmed in other regions (Fihel, 2004: 115–128).

Moreover, the negative impact of the migration outflow (permanent and temporary) on the economic development of migration regions within the context of human capital flight (*brain drain*) is also of significance. Emigration may concern big groups of employees specialising in certain disciplines (e.g. construction, food production, agriculture, horticulture, medicine) on local labour markets, which decisively weakens their location potential and their attractiveness for investors as a result. Such a situation may exert an unfavourable impact on the development of small and medium enterprises which lose a chance for activity and development in face of mass external migration (Krasnodębska, 2009: 50–53). It was also found out that the presence of a small (limited) labour market is the most important and structural economic determinant for the higher outflow rates of young educated inhabitants of the region (see also: Faggian, McCann, 2009: 317–333; Venhorst et al., 2011: 57–82).

The analysis of the socio-professional characteristics of emigrants as well as the size of emigration and the demographic structure of emigrants in the spatial patterns (urban and rural areas) within the Opolskie Voivodship indicates that emigration outflows play an important role on many local labour

markets reducing the supply of qualified personnel. The flight of personnel of the understaffed professions creates certain problems on the labour market and leads to lowering the quality of human capital. The excessive migration to the EU countries should therefore be considered a factor disturbing the development of a region not only within the demographic but also the economic scope.

Migrants seeking a job and leaving for a long time may experience not only loosening the family ties but also bonds with the environment of their origin and the local society in a migration region. Although migrants accumulate relatively sizeable economic capital, their cultural and social capital, which anyway is frequently restricted, becomes devalued. They often suffer from so called double marginalisation – the first at the place of their work abroad due to the problems with the integration in the new environment, which is often culturally strange, or due to insufficient knowledge of the language, and the second at the place of origin, in a migration region where they do not stay on a permanent basis.

Social consequences resulting from the separation from the family and disintegration of family ties are particularly adverse. Emigration from a migration region usually contributes to an emergence of broken families and further to cultural and social acceptance of a family model functioning in the condition of permanent separation. In connection with an increasing scale of departures the frequency at which such families as well as related problems occur is increasing. The research indicates that the problem of migration orphans in the Opolskie Voivodship applies to 10,000 children (9). In the majority of cases this arises from the absence of one parent (about 91%) but in some instances from the absence of both (under 10%).

3.5. Migration policy as a component of regional policy

The adverse impact of the permanent negative balance of external migration on the demographic and socio-economic structure of migration regions calls for a need to formulate a clearly determined policy accounting for migration problems (migration policy) in such regions. Actions in the sphere of

emigration aimed at, first of all, protection of human and intellectual potential, preventing permanent emigration and, at the same time, promoting such temporary migration that enables personal and socio-cultural development of migrating people thus strengthening their economic capabilities, are of particular significance in a migration region. Activities favouring re-emigration are also important. Migrants returning to their region of origin may become an extremely important factor for the economic and social development. Advantages of re-emigration embrace human capital of individual migrants (education, qualifications, training and knowledge), financial capital and entrepreneurial potential (foreign investments, trade, money transfers, savings, investments in a new business, purchases of property and donations to charity), social capital (business networks, standards and values facilitating co-operation within various groups), and finally the affective capital (engagement and good will resulting from an emotional engagement in the country of origin).

In spite of the significance of problems related to emigration and re-emigration in the regional migration policy, the best results are achieved by means of a complex approach to creating such a policy. This means that while creating and implementing it, it is necessary to take into consideration all the elements related to the widely understood migration, i.e. not only going abroad and returning but also immigration of foreigners and potential emigration. These spheres and the related support groups determine a diversified scope of preconditions, mechanisms, solutions and problems involved. At the same time, the complexity of this type preconditions the effectiveness of such a system.

Since 2004, the problems of migration have received more and more attention in the developmental policy on the level of all Polish Voivodships. A few projects dedicated to the issues of re-emigration have been carried out recently (10). The problems related directly to external migration or its outcomes are a very important element accounted for in the developmental policy both at the regional and the local level in the Opolskie Voivodship. They can be found in strategic documents of these administrative units and in proposals of practical solutions dealing with migration problems. External migration is broadly described in the present and

updated 'Development Strategy of the Opole Voivodship' both in the diagnostic and stipulation parts. It can also be noticed that external migration is an important element of the activities undertaken in an increasing number of gminas in the Opolskie Voivodship. The programme of practical undertakings entitled *Opole, I stay here* was prepared at the request of the authorities of the Opolskie Voivodship Board in 2007. It is the only regional programme so far intended to decrease the scale of economically motivated migration. It also promotes opportunities for employment and professional progress in the Opolskie Voivodship trying to create and effective counterbalance to and an intense promotion of employment abroad, especially when emigration is not caused by an economic necessity. The Opolskie Voivodship Board invites businesses, higher education institutions, schools, job offices, and education sector from the region to participate in this programme. The programme offers also a database with job offers, educational offer, support programmes for businesspeople and cultural and tourist events.

4. Conclusions

We can talk about a *migration region* when in a given area a process of a considerable number of permanent, temporary or shuttle migration can be observed and a lasting migration outflow continues. A well established tradition of the migration outflow, a high number of migrations and their permanent character, as well as well developed networks of migration links in combination with various socio-political and economic reasons for these migrations are important elements determining the character of a migration region. The consequences of migration processes for individual migrants and their families, as well as at the level of opportunities and directions of regional development, should be added to this picture. In such a region, migration is a phenomenon important enough to clearly influence (in a positive or negative manner) the socio-demographic and economic processes as well as transformations of local structures (e.g. unfavourable demographic structure, low entrepreneurship, labour deficit, restricted social activity, transfer of migration capital, reduction of unem-

ployment). The depopulation of a region resulting from migration and its consequences thus become one of the principal problem areas influencing the present and future development of a region. The situation is also reflected in the developmental concepts formulated in a migration region and in the resulting strategic documents in which migration is assigned an important role. The aim of practical actions undertaken in a migration region by the entities (institutions) concerned with its development is to minimise the negative consequences of migration and maximise the advantages. The latter aspect is related to a proper preparation of a region for an effective re-emigration. The examples of return migration in many countries (e.g. Ireland and Spain) indicate that migrants most often return to the very regions they left. What it means for the decision-makers is that in migration regions attention should be paid to the fates of re-emigrants and the administration there should be prepared in particular to face the challenge. Therefore, return migration should be managed also at the regional and even local level. The relative or rising level of appropriate job opportunities in a migration region remains a key factor in retaining and attracting the inhabitants of the region.

It should be emphasised that it is extremely difficult to balance in any way the effects of emigration abroad for work in a region subjected to long-term migration as in the development of such areas the adverse effects of external migration are displayed in the first place (see also Rephann, 2004: 379–410). As a result, the situation arises in which a given migration region is covered by the rules of polarised development – it develops more weakly and slowly. The permanent outflow of the most skilled and resourceful people and the resulting negative consequences on the regional labour market, the decrease in demand connected with the depopulation of numerous local areas as well as social results (the increase in the number of divorced people and unemployed single parents depending on some other sources of income), and many others – make such areas become problematic regions requiring activities of strategic character from the outside.

It is necessary to competently control the developmental processes in a migration region, that is to adopt a regional policy directed at the identification of economic, social and political causes strengthen-

ing the patterns of the population outflow and minimising the negative consequences of the fact that people leave for work and, on the other hand, making use of the opportunities provided by migration on a regional scale.

Notes

- (1) The *Opolskie Voivodship* is an administrative unit in Poland on a regional level (NUTS-2) and the terms *Opolskie Voivodship*, *Opole region* and *Opole Silesia* are used in the text interchangeably.
- (2) The results of the following research were used in the article: The influence of labour migration abroad on the socio-economic situation of a region. The analysis using the example of the Opole Voivodship as a migration region, the project carried out by the Ministry of Science and Higher Education, 2005–2007, the project coordinator K. Heffner; Place and significance of migration abroad in regional development, the project carried out by the National Science Centre, 2011–2013, the project coordinator B. Solga.
- (3) The term *gmina* means a unit of local self-government in Poland.
- (4) Urban gminas: Baborów, Biała, Głogówek, Gogolin, Kolonowskie, Leśnica, Ujazd; rural gminas: Biała, Bierawa, Chrzastowice, Cisek, Dobrzeń Wielki, Głogówek, Komprachcice, Krapkowice, Lasowice Wielkie, Leśnica, Łubniany, Murów, Pawłowiczki, Pokój, Polska Cerekiew, Popielów, Prószków, Reńska Wieś, Strzeleczyński, Turawa, Walce, Zębowice.
- (5) Urban gminas: Biała (10.4%), Głogówek (15.3), Kędzierzyn-Koźle (9.2), Strzelce Opolskie (9.2), Ujazd (24.8); rural gminas: Biała (11.2), Bierawa (12.1), Cisek (14.3), Głogówek (8.2), Izbićko (8.4), Murów (10.2), Polska Cerekiew (16.9), Reńska Wieś (8.2), Ujazd (9.0).
- (6) For example, the quoted research was presented in: Wieruszewska, M. editor, 2007: *Tu i tam. Migracje z polskich wsi za granicę (Here and there. External migration from Polish villages. – in Polish)*, Warszawa: Instytut Rozwoju Wsi i Rolnictwa PAN, p. 277.
- (7) *Gross reproduction coefficient* is an average number of daughters given birth to by a woman under the assumption that a woman of the childbearing age (15–49) will give birth as frequently as all women giving birth in the year for which the coefficient is calculated (unchangeable fertility coefficients). The gross reproduction coefficient is a product of the fertility rate and the indicator expressing the share of female babies in the total number of babies born alive. It amounted to 0.541 in the Opolskie Voivodship in 2009 (0.678 for Poland). *The demographic dynamics coefficient* is the ratio of the number of babies born alive during a given period (usually 1 year) to the number of deaths during the same period. It amounted to 0.975 for the Opolskie Voivodship over the years 1995–2009 (1.037 for entire Poland).
- (8) The research conducted by *Instytut Badań nad Gospodarką Rynkową (Research Institute on Market Economy)* reveals that the dynamics of businesses registered in the National Official Register of Business Entities (REGON) in 1998–2008 was significant. Owing to this index the Opole region was in the first place in the country ahead of the Świętokrzyskie, the Pomorskie and the Zachodniopomorskie Voivodships. Such an increase in the number of businesses in the Opolskie Voivodship was possible mainly thanks to a considerable increase in the number of businesses providing services in the area of real estate, lease and running a business activity, as well as entities engaged in trade and repairs. Moreover, businesses in the building sector also made a significant contribution.
- (9) The research was conducted by the Regional Centre of Social Policy (*Regionalny Ośrodek Polityki Społecznej*) in Opole.
- (10) For example, the Strategic Advisory Centre (*Centrum Doradztwa Strategicznego*) in Krakow developed two twin programmes: 'Direction: Małopolska' (*Kierunek Małopolska*) and 'Direction: Lower Silesia' (*Kierunek Dolny Śląsk*). At present, the third programme 'Direction: Silesia' (*Kierunek Śląsk*) is under preparation. A research unit *Grupa IQS*, on the other hand, undertook research entitled 'Return home – psychological and social adaptation mechanisms of

re-emigrants from the Warmińsko-Mazurskie Voivodship'. There are also interesting attempts to approach migration as a tool of regional development undertaken by the Catholic University of Lublin in cooperation with about a dozen European organisations, including the Chamber of Employment in the Italian Veneto region being the target of migration from the Lubelskie Voivodship. The aim of the first of these programmes – 'Migralink' was, among others, to analyse the phenomenon of legal economically motivated migration in Central Europe, the Adriatic and the Balkans, to create an innovative system of services for migrants and management of re-emigration, as well as training for administrative employees and NGOs in Poland, Slovakia and Hungary in these fields. As a result of these activities several dozen of administration employees in the Lubelskie Voivodship obtained the specialisation of a *migration officer*. This activity was further continued within the framework of 'Migravalue' programme which, apart from the Catholic University of Lublin, was joined by the Ministry of Labour and Social Policy. The purpose of this programme was to create a model of active management of migration flows as a tool of social and economic development both in the region of origin and the target region of migration, as well as strengthening the links binding these regions by means of supporting financial and human capital created by migrants.

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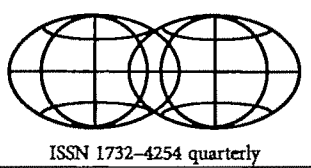
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Geographical aspects of the changes of Hungary's deconcentrated state administration system between 1990 and 2012

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Abstract. One of the most important segments of the post-1990 transformation of territory-based administration in Hungary was the changing of the geographical structure of deconcentrated state administrative organisations. The study, on the one hand, provides a brief overview of the history of deconcentrated state administrative organisations in Hungary, and discusses the regional characteristics of the organisational transformations after the political changes, taking six moments in time (the middle of 1994, 1998, 2002, 2006, 2010 and 2012 respectively) as the basis. On the other hand, using the same six snapshots in time, it examines which settlements experienced favourable or unfavourable changes, and what factors influenced the selection of the seats for these institutions.

The results of the survey indicated that the alignment of territorial structure of deconcentrated state administrative organizations to the planning-statistical, NUTS 2 regions has already begun at the end of the 1990s. The government formed in 2006 took significant steps in the area of aligning the spatial structure of the organizations with the planning-statistical regions; however, in the period after 2010 the significance of the county level increased again. In the period examined, no significant changes took place at the top and at the bottom of the list according to the number of seats: the largest settlements of the individual regions reinforced their leading positions.

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1. Introduction

One of the most important questions of the process of decentralizing public administration in Western Europe, which started in the 1960s, was the creation of the intermediate level of territorial units, most commonly referred to as regions. On these levels, both elements of public administration gradually established their organizations: on the one hand, the self-governing bodies elected by the local population and gradually acquiring more and more powers were formed, and on the other hand, state administration also created its own deconcentrated institutions in these units. Geographical boundaries of the intermediate level administrative units were established using different methods. In some countries e.g. Austria, the territorial units already in existence earlier became this level of public administration (Newman, Thornley, 1996); elsewhere e.g. in France, this level was created by way of the consolidation of units (“départements”) that had been in existence for a long time (Wannop, 1995).

From the point of view of the decentralization of public administration, an important role was played by the changes in the regional policy of the European Union: after 1989, the delimiting of the lagging behind regions took place on the level of NUTS 2 regions. Initially, the sizes of the territorial units varied greatly; however, Regulation 1059/2003/EC of the European Parliament and the Council already strove to reduce these differences. Even though the European Union did not require countries to align their units of public administration with NUTS 2 regions, in the drawing up and the implementation of development programmes, such coincidences meant significant advantages (Balchin et al., 1999). As a result, from the second half of the 1990s on, in many Member States of the European Union that had previously not embraced (e.g. Denmark, Ireland), several definite steps were taken to ensure that NUTS 2 regions also be given certain administrative functions (Vrangbæk, 2010).

From the second half of the 1990s, in the course of their preparation for accession to the European Union, more and more attention was paid also in East Central European countries to the idea of the formation of regions. Researchers who analysed this transformation fundamentally mentioned two reasons: on the one hand, they referred to the process

of Europeanization, under which the EU's cohesion policy was driving institutional changes in these countries (e.g. Scherpepereel, 2010). At the same time, another group of researchers (e.g. Batchler, McMaster, 2008) expresses their doubts whether cohesion policy would necessarily support regionalization and believed that the international factors (and, in particular, the political elite) played a much more important role in this process (Brusis, 2006; O'Dwyer, 2006). At the same time, major differences can be observed between individual East Central European countries as far as the borders of the regions formed are concerned: Poland was the only one in which the intermediate level of public administration coincided with NUTS 2 regions (Ferry, 2003; Yoder, 2003). By contrast, in the other countries, even though the decentralization of public administration has started, no such coincidence can be observed: for example, in the Czech Republic, there are 8 NUTS 2 regions, but 14 territorial units on the intermediate level of public administration (Yoder, 2003; Brusis, 2005), while in Slovakia the number of NUTS 2-level regions is 4, as opposed to the 8 counties (“kraj”) comprised in the intermediate level of public administration (Brusis, 2005).

In the 4–5 years after the political changes in Hungary, similarly to other Central and Eastern European countries, a decrease of the importance of the counties, the intermediate level of public administration, could be observed, while in a parallel way the role of the local (municipal) and the central (governmental) level increased. In 1990, in accordance with the agreement between the two most important parties of the given parliamentary cycle (the government party Hungarian Democratic Forum and the opposition party Alliance of Free Democrats), Act LXV of 1990 on local governments was a so-called 2/3 majority law. This meant that any changing of the roles of the newly created county governments and the creation of regional governments was only possible with the votes of 2/3 of the members of Parliament, which fact significantly curtailed any such efforts of the governing parties in power. As a consequence, the activities of the central government related to regional public administration were decidedly concentrated on the transformation of the ministries and the deconcentrated of the state administrative organisations, as well as the modification of the territorial compe-

tences of the same, since this could also be done by way of acts of Parliament passed with simple majority and government decrees.

With a view to the above, this study attempts to give answers for the questions below:

- How has the governmental approach towards the deconcentrated state administrative organisations changed since 1990, what were the reasons behind the changes and how has this fact influenced their territorial structure?
- Which towns in Hungary can be regarded as winners of this process and to what factors can the success of these towns be traced back to?

The importance of the research project can explain the fact that citizens are in a very close contact with this level of state administration, as one of the actors of the executive power, and accordingly, its efficient operation, in which the most appropriate territorial structure is also inherent, is a basic condition of the satisfaction of the citizens.

2. Materials and research methods

In the research for this paper, we relied on the provisions of law (acts of Parliament, government de-

crees, government decisions) pertaining to the intermediate level of the individual territorial administrative organisations, and only took into consideration civilian organisations i.e. the study does not cover law enforcement agencies, such as the police, border patrol). As a result, a total of 47 organisations constituted the subject of our inquiry.

Concerning the territorial structure of the deconcentrated state administrative organizations in Hungary, two main types can be basically identified, with the further subdivision of the second type into three subcategories:

- organizations operating at the county level (the NUTS 3 level in the nomenclature of territorial units of the European Union – Fig. 1)
- organizations operating at the regional level
- organizations with territorial competences aligned with the planning-statistical, NUTS 2 regions (there are 7 planning-statistical regions in Hungary presently – Fig. 2)
- organizations along the county borders but aligned with the planning-statistical regions (Fig. 3)
- organizations with territorial competences not aligning with the county borders (borders are mainly effected by natural geographical conditions – Fig. 4).

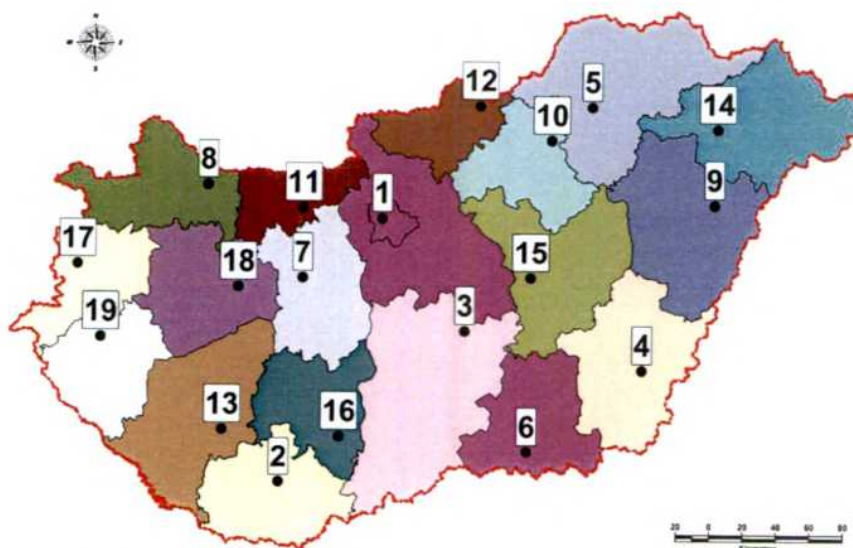


Fig. 1. County seats of Hungary

Explanation: 1 – Budapest; 2 – Pécs; 3 – Kecskemét; 4 – Békéscsaba; 5 – Miskolc; 6 – Szeged; 7 – Székesfehérvár; 8 – Győr; 9 – Debrecen; 10 – Eger; 11 – Tatabánya; 12 – Salgótarján; 13 – Kaposvár; 14 – Nyíregyháza; 15 – Szolnok; 16 – Szekszárd; 17 – Szombathely; 18 – Veszprém; 19 – Zalaegerszeg

Source: www.nfu.hu (Homepage of National Development Agency), DoA: 9 January 2013

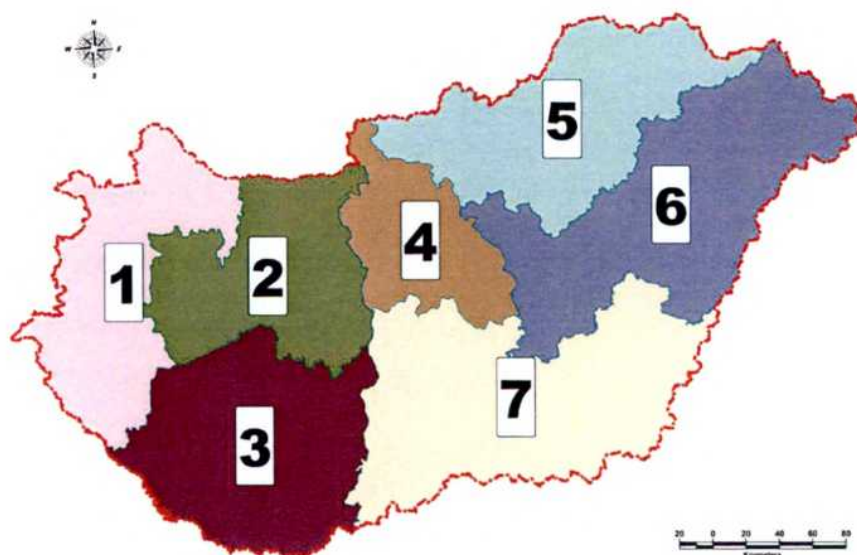


Fig. 2. Borders of Hungarian planning-statistical regions

Explanation: 1 – Western Transdanubian region; 2 – Central Transdanubian region; 3 – Southern Transdanubian region; 4 – Central Hungarian region; 5 – Northern Hungarian region; 6 – Northern Great Plain region; 7 – Southern Great Plain region

Source: www.nfu.hu (Homepage of National Development Agency), DoA: 9 January 2013

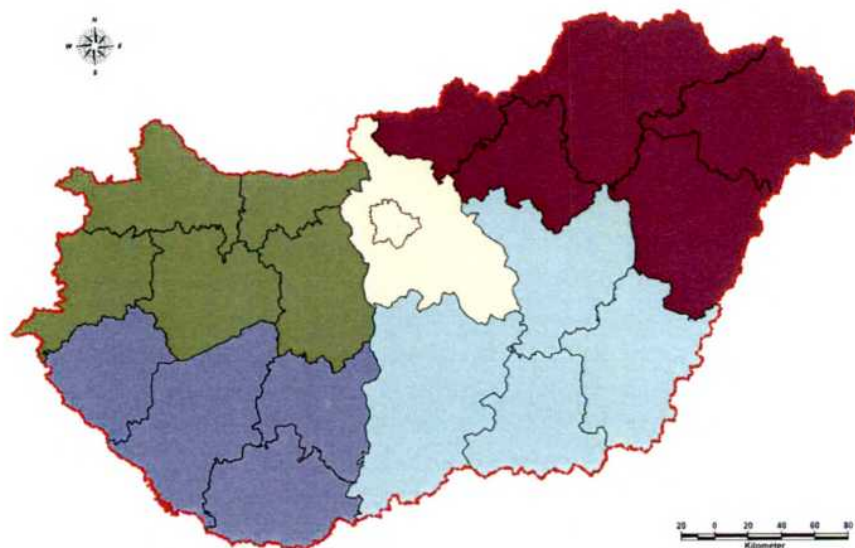


Fig. 3. Borders of Mining District Authorities of Mining and Geology Bureau of Hungary

Source: www.mbfh.hu (Homepage of Mining and Geology Bureau of Hungary), DoA: 9 January 2013

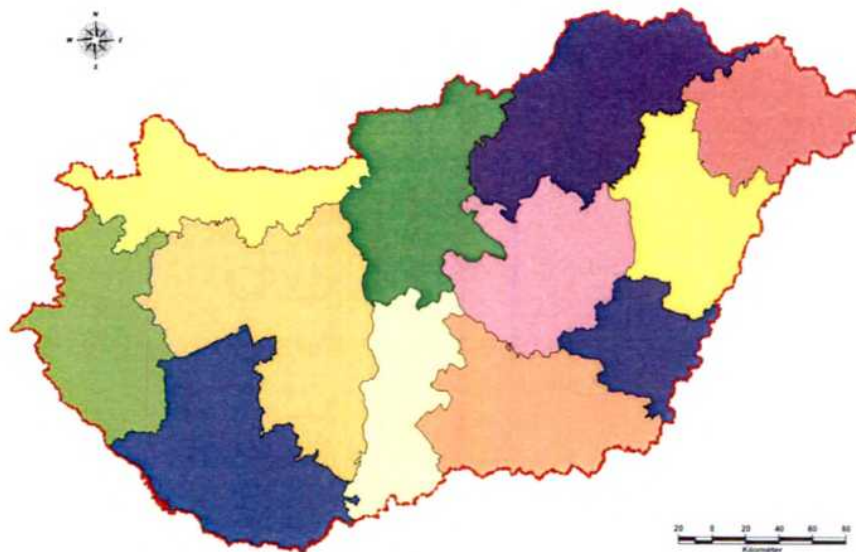


Fig. 4. Borders of National Institute for Environment

Source: www.neki.gov.hu (Homepage of National Institute of Environment),
DoA: 9 January 2013

3. Results

The role of the deconcentrated state administrative organizations in Hungary's public administration has increased after the regime change of 1990, when a significant majority of the ministries tried to exploit the space evolved at the intermediate level due to the decreasing role of the counties. Thus, they tried to obtain positions at this level, due to which the role and influence of the government has significantly increased in the territorial state administration. At the beginning of the 1990s more than 30 deconcentrated state administrative organizations operated in Hungary. In order to cease the parallelism and to stop the overgrowing organizations, the Hungarian Socialist Party – Alliance of Free Democrats coalition government that entered into power in 1994 aimed to review and reform the situation of these organizations. Although the reform implemented as a result of the Government Decisions no. 1105/1995 (XI.1.) and 1027/1996 (IV.3.) led to the rationalisation of the system at a certain rate, neither the content, nor the territorial structure was basically changed (Szigeti, 2000). The territorial development of deconcentrated state administrative organizations was considerably effected by the 35/1998 (III.20.) Decision of the Parliament

on the National Spatial Development Concept containing the system of planning-statistical regions for the first time that is also in force today.

The right-wing Orbán government that came into power in 1998 also considered the regional transformation of the territorially based state administration (and initially also the self governing administration) as an important task, in the background of which was primarily the effect of the European Union (accession negotiations with Hungary started in 1998). It was in this spirit that Government Decision no. 1052/1999 (V. 21) on the plan of governmental tasks concerning the continued development of the public administration system in 1999–2000 was adopted. It provided that, on the one hand “the possibilities for the formation of self-governing regions with elected bodies should be examined,” and on the other hand, “the possibilities for placing the territorially based state administration on regional foundations should be examined,” and in the framework of the latter, the seven planning-statistical regions should be given a priority. The role of the seven planning-statistical regions was further strengthened by the Act XCII of 1999 on amendment of Act XXI of 1996 on Regional Development and Regional Planning, which declared that regional development councils operate in planning-statistical regions. At the same time, Govern-

ment Decision no. 1057/2001. (VI. 21.) on the plan of governmental tasks concerning the continued development of the public administration system in 2001–2002 can be regarded as a step back, since from among the two tasks outlined above, it only contained the second one, which signalled the fact that the Orbán government abandoned the plan of forming the self-governing regions (Wiener, 2003).

The next large-scale governmental intervention in territorial system of deconcentrated state administrative organizations was implemented in 2003/2004, this time already under the leadership of the left-wing/liberal government and this process can be primarily explained by the accession of Hungary to the European Union in 2004. On the one hand several regulations, e.g. 2198/2003, 1113/2003, 1075/2004 Governmental Decisions accentuated the necessity of harmonising the territorial structure of the deconcentrated organizations and the planning-statistical regions (Ivancsics, 2006), on the other hand concrete steps were to be taken e.g. transforming the territorial organizations of the Central Statistical Office. The formation of the regional tier of the intermediate level public administration was a very important element of the programme of the left-wing/liberal Gyurcsány government, elected in 2006 (NUTS 2-level regions were meant by regions); however, in the absence of a sufficient parliamentary majority, only the transformation of state administration could be accomplished by them. The legal background of the process was created by Act CIX of 2006 on the amendment of certain statutes in connection with changes in the branch of government, relying on which several government decrees issued in late 2006 implemented the regional transformation of the deconcentrated state administrative organisations, which had so far had county-based structure, in such a way that they were aligned with the planning-statistical regions.

The Orbán government elected in 2010 altogether abandoned the idea of the regions, and as a consequence, they moved the emphasis also on the intermediate level of territorial state administration from regions to the counties as units of significant historical traditions. There were fundamentally two factors in the background of the process: on the one hand, in recent years, the European Union is also displays an increasing degree of distrust towards Eastern-European regions (Pálné, Kovács,

2009), on the other hand, the new government was striving to emphasize independence from the European Union, and this effort also manifested itself in the area of public administration. It was in the spirit of the above, that the Hungarian Parliament passed Act CXXVI of 2010 on metropolitan and county-level government offices and legislative amendments pertaining to the establishment of metropolitan and county-level government offices and to territorial integration, which stated that the metropolitan and county-level government offices are the territorial state administration agencies of the central government with general competence. As the next step of the transformation, Government Decree 288/2010 (XII. 21.) on the metropolitan and county-level government offices was adopted, under which the majority of the earlier independently operating territorial units of the central administration became sub-units (to use the official term, specialized administrative agencies) of the metropolitan and county government offices.

Examining the development of the territorial structure of the deconcentrated state administrative organizations (Table 1) we can essentially reveal the effects of governmental interventions detailed above. In the 1990s more than half of the organizations operated at county level (Hajdú, 2001) and the most of the organizations operating within regional frames did not fit to the planning-statistical regions. The only exception is the territorial offices of the Hungarian Geological Survey and, in 1998, the branch offices of the Directorate of Cultural Heritage.

The first significant change in the territorial structure was introduced between 1998 and 2002, which was basically originated from the National Spatial Development Concept and Act XCII of 1999 mentioned above. As a result, on the one hand, the territorial structure of the National Office of Measures and the Hungarian Customs and Finance Guard was adjusted to the planning-statistical regions (earlier, both organizations operated in the territorial structure of counties), and on the other hand, the majority of the newly created deconcentrated state administration organizations (National Centre for Assessment and Examination in Public Education, Office of Immigration and Nationality, SAPARD Office) followed the planning-statistical regions. The equilibrium that was in place in 2002

Table 1. The change of the territorial structure of the deconcentrated state administrative organization

	June 1994	June 1998	June 2002	June 2006	April 2010	September 2012
organizations operating at county level	17	17	16	14	7	19
organizations operating at regional level	16	15	18	23	29	15
Of these:						
organizations with territorial competences aligning with the planning-statistical regions	1	2	6	11	20	7
organizations along the county borders but not aligned with the planning-statistical regions	10	8	6	6	4	3
organizations with territorial competences not aligned with the county borders	5	5	6	6	5	5

Source: Compiled by the authors on the basis of government decrees and decisions concerning each organization

between the deconcentrated state administrative organizations operating on the county and regional levels was moved towards the regional organizations in 2006. It is true that three organizations operating in county frameworks (Agricultural and Rural Development Agency, National Land Fund Managing Organisation, and Office of Justice) were created in this period, but the abovementioned transformation of the territorial organizations of the Central Statistical Office and the Hungarian Asset Management Directorate; in addition, the territorial units of the Hungarian Labour Inspectorate also continued their work in accordance with the planning-statistical regions.

The greatest waves of changes were implemented in December 2006 when certain concentrations were implemented (e.g. the National Office of Measures, whose tasks were taken over by the Hungarian Trade License Office). Furthermore the government completed the regionalization of the county-level organizations such as Tax and Financial Control Administration, National Public Health and Medical Officer Service, Public Administration Office, National Transport Authority, Hungarian State Treasury, Labour Centre and Pension Payment Directorate. The large-scale changes can be primarily attributed to the fact that in the European Union 2007–2013 programming period, approximately 25% of the financial assistance available in the New Hungary Development Plan was used in the framework of the Regional Operative Programmes, and the central government believed that the alignment of the system of deconcentrated organisations would significantly contribute to the successful implementation of these programmes.

The measures of the new government entering into power in 2010 at the same time also significantly changed the spatial structure of the territorial organizations. The majority of the specialized administrative agencies of the newly created metropolitan and county government offices, as a matter of course, have continued to work in the framework of the counties, but we can also observe some exceptions:

- Forestry Authorities have territorial jurisdictions that also cross over county lines.
- Offices of Cultural Heritage have regional jurisdictions established along county lines, but these regions are not identical with the planning-statistical regions.
- The deconcentrated organizations earlier working in the framework of the Hungarian Trade License Office, such as the Offices of Measures and Technical Safety of the Metropolitan and County Government Offices continued to operate on the level of the planning-statistical regions.

Parallel with the reorganization of regional state administration, strong competition emerged between the individual country centres for getting the title of seat of the new regional organizational units, which is fundamentally due to the fact, as researchers (e.g. Harvey, 1989) agree, that the presence of the given regional seat can have several advantages for the given settlement:

- the status of regional seat lends prestige to the given settlement, and it can be used, for example, in publications promoting the settlement, thus also emphasizing the central role played;
- having the regional seat increases the number of employees in the given settlement, thus reduc-

ing unemployment and the burdens on the local government.

Analysing the seats of the centres of deconcentrated organizations (Table 2) we can find the situation to be clear in the case of five regions where Debrecen (Northern Great Plain region), Szeged (Southern Great Plain region), Pécs (Southern Transdanubian region), Miskolc (Northern Hungarian region), and Budapest (Central Hungarian

region) have functioned as centres for the most organizations in the whole period examined. The important role of the county seats concerned can be explained by having the largest number of population within the region, their central location (in this respect, Miskolc is the only exception), and their historical roles: the cities concerned were considered, already in the socialist era as counterpoints to Budapest, and their development was a priority.

Table 2. The central offices of the deconcentrated (territorial) state administration organizations (the table contains only those settlements in which, in any of the years indicated, at least 10 organizations had their centres, the number of organizations aligned with the planning-statistical regions in brackets

	1994	1998	2002	2006	2010	2012
Central Hungarian region						
Budapest	31 (1)	30 (2)	32 (6)	35 (11)	35 (20)	33 (7)
Northern Hungarian region						
Miskolc	30 (0)	28 (1)	30 (5)	31 (8)	24 (11)	31 (6)
Eger	21 (0)	19 (0)	19 (0)	20 (2)	17 (7)	23 (1)
Salgótarján	17 (1)	16 (1)	16 (1)	15 (1)	8 (2)	19 (0)
Northern Great Plain region						
Debrecen	31 (1)	30 (2)	31 (4)	32 (8)	25 (12)	30 (5)
Nyíregyháza	20 (0)	20 (0)	20 (1)	20 (2)	16 (6)	23 (2)
Szolnok	22 (0)	23 (0)	22 (1)	20 (1)	12 (2)	22 (0)
Southern Great Plain region						
Szeged	28 (1)	27 (2)	28 (6)	28 (8)	22 (12)	29 (6)
Kecskemét	21 (0)	22 (0)	21 (0)	21 (3)	16 (6)	23 (1)
Békéscsaba	19 (0)	20 (0)	20 (0)	18 (0)	10 (2)	20 (0)
Southern Transdanubian region						
Pécs	33 (1)	32 (2)	32 (4)	35 (9)	27 (12)	33 (6)
Kaposvár	19 (0)	18 (0)	19 (2)	18 (2)	14 (6)	21 (1)
Székeszárd	18 (0)	18 (0)	17 (0)	15 (0)	9 (2)	19 (0)
Western Transdanubian region						
Győr	26 (0)	25 (1)	26 (4)	27 (7)	23 (14)	26 (5)
Szombathely	23 (0)	24 (1)	22 (1)	23 (3)	14 (4)	24 (1)
Zalaegerszeg	21 (0)	20 (0)	19 (1)	17 (1)	10 (2)	21 (1)
Central Transdanubian region						
Székesfehérvár	21 (0)	23 (1)	24 (3)	25 (6)	21 (12)	27 (5)
Veszprém	24 (1)	22 (1)	24 (3)	23 (5)	15 (6)	24 (2)
Tatabánya	16 (0)	16 (0)	15 (0)	14 (0)	8 (2)	19 (0)

Source: Compiled by the authors on the basis of government decrees and decisions concerning each organization

In the Central Transdanubian region, Veszprém still had a better position in 1994, after which Székesfehérvár began to emerge gradually and became the regional centre of state administration by 2010. A similar process can be observed in the

Western Transdanubian region as well where the development and emergence of Győr decreased at the same time the significance of other urban settlements (e.g. Szombathely, Zalaegerszeg). In the background of the process in both cases was the fact

that Székesfehérvár and Győr were among the most successful cities of the economic transformation in Hungary, and this fact also made its effect felt in the political sphere while in the case of Székesfehérvár, the effect of the longer historical tradition was also considered to be an important factor.

At the bottom of the list at all times were Salgótarján, Szekszárd and Tatabánya. In the first two cases, the low number of population played an important role in the absence of centres, to which was also added in the case of Salgótarján the peripheral location within the region, and in case of Szekszárd the fierce competition between Kaposvár and Pécs. In the case of Tatabánya, the unfavourable position can be traced back, firstly, to the lack of traditions in that city in the field of public administration, secondly, to the competition between Veszprém and Székesfehérvár, and thirdly, to the bad accessibility from the other two county seats.

In connection with the restructuring in 2006, which generated the greatest changes, we can draw the conclusion that the government did not intend to concentrate the centres of the deconcentrated state administrative organizations into one town, but it distributed these organizations among the county seats of the regions. In our opinion, this fact can be fundamentally attributed to two things. On the hand, the central government has endeavoured to spread the notion of regional administrative structure, and in this respect it would have been disadvantageous to concentrate the new centres in one county seat for each planning-statistical region at the expense of ignoring the other two county seats. On the other hand, after the anti-government demonstration in the autumn of 2006, the government did not want to have further conflicts with the mainly opposition-lead county seats because after the local election of 2006 only six county seats – Nyíregyháza, Miskolc, Szeged, Pécs, Székesfehérvár and Szombathely – had mayors who came from the governing party.

4. Conclusions

The most important conclusions of this study can be summarized as follows. The intermediate level of public administration can be regarded as unbal-

anced in Hungary since the regime change, due to the lack of political consensus, with a view to the statutory requirements applicable to the area concerned, for a long time no significant decisions were made either in the county vs. region debate or in terms of the scopes of competence of the individual territorial levels. Consequently, the activities of the central government were limited to the transformation of one branch of public administration, i.e. state administration. In the background of the processes that took place until the second half of the 1990s was the intention of increasing efficiency and creating organisational units of appropriate size, and then with the date of accession coming closer, the effect of Europeanization played and increasingly important role. In the new millennium, preparation for the regional policy of the European Union already played an important role, which is also shown by the fact that as a result of their transformation in 2006, organisation aligned with the NUTS 2 level came to dominate. Simultaneously, the role of the internal factors can be regarded as minimal, which can be explained by the artificial nature of the formation of the regions (the county borders could not be changed) and with the weak regional identity (Pálné, Kovács, 2009).

In the light of the above it is not surprising that the alignment of territorial structure of the deconcentrated state administrative organizations to the planning-statistical regions began at the end of the 1990s, after the acceptance of the National Spatial Development Concept and the amendment of the law on regional development. In the interest of the successful implementation of the European Union's regional policy in the 2007–2013 period the government formed in 2006 took significant steps in the area of aligning the spatial structure of the organizations with the planning-statistical regions. However, the period after 2010 saw a major restructuring, the significance of the county level increased again, which can be primarily traced back to the changed political preferences of the new government. In the period examined, no significant changes took place at the top and at the bottom of the list according to the number of seats: the largest, economically most important, geographically the most favourably located settlements of the individual regions reinforced their leading positions, with Székesfehérvár in the Central Transdanubian and Győr in

the Western Transdanubian region coming to the forefront, due mainly to economic and partly historical reasons.

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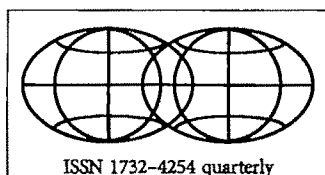
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The accuracy of the heat index to explain the excess of mortality and morbidity during heat waves – a case study in a mediterranean climate

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Abstract. The aim of this contribution was to evaluate the accuracy of a well known human comfort index, the heat index, to anticipate the effects of the July 2006 heat wave in mortality (all causes) and morbidity (all causes, respiratory and circulatory disease). Our assessment was done to all citizens, to people of the 75+ cohort and to each gender, in Porto. For further statistical analysis, we calculated an expected number of admissions by averaging the admissions recorded during the comparison period. The 95% confidence interval was calculated, using a standard method based on the t-distribution, for differences between independent means with different population variances, using the Levene test to evaluate the variance's homogeneity. During the 2006 heat wave, a 52% mortality excess was registered relatively to the expected mortality ($p < 0.001$), for all cohorts of the population. The admissions excess for all ages included the admissions due to respiratory diseases ($p < 0.029$), pneumonia ($p < 0.001$) and chronic obstructive pulmonary disease ($p < 0.001$). For the 75+ cohort, the admissions due to respiratory diseases ($p < 0.017$), pneumonia ($p < 0.001$) and heart failure ($p < 0.610$) were also statistically high. The obtained results confirm that the heat index is a truthful method to anticipate the negative impacts of heat waves in human health even in climate contexts adapted to hot summers like at Porto – a Mediterranean tempered climate. The impacts of July 2006's heat wave in the increase of mortality (all causes) and in respiratory morbidity (all population and 75+cohort) was evident.

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1. Introduction

All 21st climate scenarios produced by several global climate models anticipate a frequency increase in the duration and intensity of the heat waves (Plan-ton et al., 2008; Monteiro et al., 2012a, 2012b, 2012c) for temperate zone and in special for Mediterranean regions like Porto (Dessai, 2002, 2003; Díaz et al., 2002a, 2002b, 2006; Meehl, Tebaldi, 2004; Monteiro et al., 2012c).

Having this climate projections in mind, the negative impacts in human health caused by heat waves have been highly investigated either by climatologists or public health experts (Monteiro et al., 2011, 2012a, 2012b, 2012c) because the human adaptation capacity to adapt to this extreme events is still considerably low. The consequences of the several heat waves that occurred after the 90's in Europe (Roon-ey et al., 1998; Calado et al., 2004; Grize et al., 2005; Fouillet et al., 2006; D'lpoliti et al., 2010; Monteiro et al., 2012a, 2012c), in United States (Semenza et al., 1999; Weisskopf et al., 2002) and in other places (Tan et al., 2007) in mortality and morbidity were highly investigated and all the conclusions claim for a greater concern with the need of innovative tools to anticipate the human health risks during extreme climatic episodes.

The research carried out on this particularly problematic had roughly two different approaches:

i) use of temperature as an isolated climatic variable and its effects in mortality and morbidity (Saez et al., 1995; Ballester et al., 1997; Hajat et al., 2002);
 ii) use of some climatic elements combination, such as temperature and relative humidity (Michelozzi et al., 2006; Schiffano et al., 2009; Almeida et al., 2010; Monteiro et al., 2012a, 2012c) and its consequences in human health deterioration. Steadman (1979a, 1979b, 1984) was an important example of these last ones, which constituted a remarkable starting point for the creation of the heat index, later on adjusted by the United States National Weather Service as an anticipation warning system for extreme heat events.

One subjacent concern to the majority of this type of investigation lies in the identification of the main vulnerable groups, namely, the elderly population (Díaz et al., 2002a), as it has a limited adaptation ability towards thermal stress factors (Jendritzky, 1993), requiring the creation of adequate preventive measures against heat waves. The negative impacts of intense heat in the elderly people by rising already existing physical weaknesses and sometimes leading even to death is recognised by several studies done in France 2006's heat wave (Fouillet et al., 2006; Rey et al., 2007), in Vienna (Hutter et al., 2007), in Holland (Huynen et al., 2001), in Spain (Borrel et al., 2006) and at Porto (Monteiro et al., 2011, 2012a, 2012b, 2012c). In the

majority of the studied cases the presence of chronic diseases are triggered and aggravated by the existing thermal discomfort during heat waves (Fouillet et al., 2006). Moreover, the individual vulnerability during extreme hot events is a composite equation where the age and the pre-existing diseases should be considered in combination with a vast list of other variables like gender (McGeekin, Mirabelli, 2001; Monteiro et al., 2012a).

During heat waves events the effects in the health of individuals living in Mediterranean climates of Europe, special in cities where the Urban Heat Island effect is strong (Rooney et al., 1998; Gaffin et al., 2008; Metzger et al., 2010) and the ageing of the population is increasing like at Portugal (Almeida et al., 2010), it is very important to give also a special focus to the individual vulnerability, which means: (a) to estimate the impacts of the 2006 heat wave, according to the heat index, in terms of total mortality, total morbidity and morbidity due to circulatory and respiratory causes, in the Great Metropolitan Area of Porto (Portugal); (b) to identify the most vulnerable groups to the heat wave impacts, comparing the excess of mortality and morbidity for the total population, for the population by gender and for the population of the 75+ cohort.

2. Materials and methods

Study areas: Porto city, the hub of a Great Metropolitan Area (GAMP), represents the second larger Portuguese urbanized area. The location in the North-Western area of the Iberian Peninsula (41°N) close to the Atlantic Ocean and well exposed to the

arrival of the zonal westerly's after a long journey over the ocean from the east coast of the USA, explains the Mediterranean tempered climate context with mild and rainy winters and hot and dry summers. The GAMP has, approximately, 1.6 million people who, spatially distributed, represent the population density of 1,115 inhabitants per 1 km² (Instituto Nacional de Estatística, 2001).

Health and climate data: The health data analysed was obtained in Instituto Nacional de Estatística databases (mortality for January to December 2002–2007) and in Biostatistics and Medical Informatics and Health System's Central Administration databases (daily admissions due to all causes, to circulatory diseases and to respiratory diseases using All Patient Diagnosis Related Groups – Version 21 (ACSS, 2011). The morbidity data were explored in four perspectives: i) all ages; ii) all ages by gender; iii) the cohort 75+; iv) the cohort 75+ by gender.

The heat index calculation, defined as an individually perceived air temperature given the humidity, was done with Porto's daily meteorological variables (Meteorological Observatory of Porto Serra do Pilar). The heat index measures the evaporative heat between a typical human and the environment, one of the appropriate measures to determine the effect of heat in the body, and better than temperature itself. The original estimation of the human-perceived equivalent temperature, proposed by Steadman (1979), comprised a group of parameters' calculations that were considerably simplified by Rothfus' model (1990), assuming several fixed magnitudes to some parameters like vapour pressure or dimensions of a human skin surface or clothing cover or clothing resistance to heat transfer or activity, etc.

$$HI = -42.379 + (2.04901523 \times T) + (10.14333127 \times R) - (0.22475541 \times T \times R) - (6.83783 \times 10^{-3} \times T^2) - (5.4481717 \times 10^{-2} \times R^2) + (1.22874 \times 10^{-3} \times T^2 \times R) + (8.5282 \times 10^{-4} \times T \times R^2) - (1.99 \times 10^{-6} \times T^2 \times R^2)$$

Where:

T = air temperature °C;

R = relative humidity %.

The calculation of the HI allows the classification of temperature (°C) according to four differ-

ent dangerousness levels, to which possible physical symptoms correspond (National Weather Service

Weather Forecast Office Summer Weather Safety and Survival Heat Index, 2011): (a) extreme danger ($HI \geq 54^{\circ}C$) – heat stroke or sunstroke; (b) danger ($41 < HI < 54$) – sunstroke, muscle cramps, and/or heat exhaustion; heatstroke due to prolonged exposure and/or physical activity; (c) extreme caution ($32 < HI < 41$) – sunstroke, muscle cramps, and/or heat exhaustion due to possible prolonged exposure and/or physical activity; (d) caution ($27 < HI < 32$) – possible fatigue due to prolonged exposure and/or physical activity.

Statistical methods: An *expected number of admissions* was calculated by determining the average number of admissions (2002 to 2007, except for 2006) recorded during three comparison weeks: the week previous to the heat wave (from July 3 to 10), the week of the heat wave (from July 11 to 18) and the following week (from July 19 to 26). From the *number of admissions observed* during the heat wave (from 11 to 18 July 2006) the *expected number of admissions* was subtracted to determine an excess of deficit in hospital admissions during the heat wave.

The 95% confidence interval was calculated, using the standard method based on the *t*-distribution for differences between independent means with different population variances, using the Levene test to evaluate the variance's homogeneity.

3. Research Results

3.1. Total mortality and morbidity excess

During the July 2006 heat wave, Porto registered an excess of 107 deaths which corresponds to an increase of 52% ($p < 0.026$) relatively to the expected mortality. At that time, the morbidity data due to all-causes did not evidence a statistically significant increase ($p < 0.938$).

The morbidity results due to circulatory and respiratory disease during the heat wave were fairly different. Morbidity due to all circulatory diseases did not reveal any statistical significant admission excess ($p < 0.562$). From the studied circulatory pathologies, the admissions due to myocardial infarction ($p < 0.353$) and heart failure ($p < 0.331$) did not reveal the admission excess during the studied extreme climatic episode.

The four hospitals admissions with respiratory diseases during the 2006 July heat wave show an excess of 67 admissions ($p < 0.029$), corresponding to an increase of 49% relatively to the expected respiratory morbidity. Moreover, some respiratory diseases evidence an even higher excess, namely the increase in pneumonia by 86% ($p < 0.001$) and chronic obstructive pulmonary disease by 100% ($p < 0.001$).

3.2. Excess morbidity by gender

Morbidity due to all-causes, like morbidity due to all circulatory causes, myocardial infarction, heart failure and chronic obstructive pulmonary disease did not present the admission excess by gender.

Morbidity due to all respiratory causes presented the admissions excess for the masculine gender by 43% ($p < 0.001$) and for the feminine gender by 58% ($p < 0.036$).

For admissions due to specific respiratory causes, only pneumonia revealed a statistically significant admission excess for the masculine gender ($p < 0.001$).

3.3. Excess morbidity for the 75+ cohort

The total morbidity of individuals from the 75+ cohort, despite revealing a slight increase during the heat wave period (22%), is not statistically significant ($p < 0.156$) for a confidence interval of 95%.

The admission excess in the population of the elderly group during the studied extreme climatic episode occurred for the generality of respiratory (59%, $p < 0.017$), pneumonia (127%, $p < 0.001$), and chronic obstructive pulmonary disease (100%, $p < 0.013$).

Morbidity due to the generality of circulatory diseases, in elderly individuals, during the heat wave remained constant, with just a slight increase by 2%, statistically meaningless ($p = 0.875$). The total circulatory morbidity due to some specific causes, namely, due to acute myocardial infarction (-38%) and heart failure (-15%) decreased during the heat wave period. Morbidity due to vascular accident revealed a slight increase of 8%, however, statistically meaningless ($p < 0.665$).

Table 1. Mortality and internments excess during the heat wave from 11/07/2006 to 18/07/2006, calculated according to the heat index

Diagnosis	A	B	C	D	E
Mortality *	All-causes	313	206	107 (52%)	0.026
All-Causes Morbidity (Total)	All-causes	2,395	2,370	25 (1%)	0.938
All-Causes Morbidity (Men)		1,034	1,072	-38 (-4%)	0.813
All-Causes Morbidity (Women)		1,361	1,266	95 (8%)	0.567
Respiratory Disease (Total)	GDC4	204	137	67 (49%)	0.029
Respiratory Disease (Men)		117	82	35 (43%)	0.000
Respiratory Disease (Women)		87	55	32 (58%)	0.036
Pneumonia (Total)	HDG 89;90	41	22	19 (86%)	0.000
Pneumonia (Men)		24	12	12 (100%)	0.001
Pneumonia (Women)		17	11	6 (55%)	0.064
Chronic Obstructive Pulmonary Disease (Total)	HDG 88	24	12	12 (100%)	0.001
Chronic Obstructive Pulmonary Disease (Men)		13	8	5 (63%)	0.089
Chronic Obstructive Pulmonary Disease (Women)		11	4	7 (175%)	0.070
Circulatory Disease (Total)	GDC5	232	218	14 (6%)	0.562
Circulatory Disease (Men)		111	110	1 (1%)	0.933
Circulatory Disease (Women)		121	108	13 (12%)	0.384
Acute Myocardial Infarction (Total)	HDG	15	19	-4 (-21%)	0.353
Acute Myocardial Infarction (Men)	121;122;123	8	10	-2 (-20%)	0.484
Acute Myocardial Infarction (Women)		7	9	-2 (-22%)	0.542
Heart Failure (Total)	HDG 127	16	20	-4 (-20%)	0.331
Heart Failure (Men)		11	9	2 (22%)	0.461
Heart Failure (Women)		5	12	-7 (-58%)	0.068
Cerebral Vascular Accident (Total)	HDG 14;15	31	28	3 (11%)	0.614
Cerebral Vascular Accident (Men)		17	14	3 (21%)	0.415
Cerebral Vascular Accident (Women)		14	14	0 (0%)	0.960

Explanation: * Mortality data by gender not available; GDC – Great Diagnostic Category; HDG – Homogeneous Diagnostic Groups; A – code; B – observed; C – expected; D – excess (95% CI); E – p-value

Source: PTDC/SAU-ESA/73016/2006

Table 2. Mortality and Internments excess in individuals from the 75+ cohort during the heat wave from 11/07/2006 to 18/07/2006, calculated according to the heat index

Diagnosis	A	B	C	D	E
Mortality ^b	All-causes	b	b	b	b
All-Causes Morbidity (Total)	All-causes	484	397	87 (22%)	0.156
All-Causes Morbidity (Men)		187	172	15 (9%)	0.660
All-Causes Morbidity (Women)		297	224	73 (33%)	0.000
Respiratory Disease (Total)	GDC4	113	54	59 (109%)	0.017
Respiratory Disease (Men)		53	28	25 (89%)	0.068
Respiratory Disease (Women)		60	25	35 (140%)	0.006
Pneumonia (Total)	HDG 89;90	25	11	14 (127%)	0.000
Pneumonia (Men)		12	5	7 (140%)	0.001
Pneumonia (Women)		13	6	7 (117%)	0.011
Chronic Obstructive Pulmonary Disease (Total)	HGD 88	12	6	6 (100%)	0.013
Chronic Obstructive Pulmonary Disease (Men)		5	4	1 (20%)	0.488
Chronic Obstructive Pulmonary Disease (Women)		7	2	5 (250%)	0.153
Circulatory Disease (Total)	GDC5	63	62	1 (2%)	0.875
Circulatory Disease (Men)		27	25	2 (13%)	0.678
Circulatory Disease (Women)		36	37	-1 (-3%)	0.893
Acute Myocardial Infarction (Total)	HDG	5	8	-3 (-38%)	0.352
Acute Myocardial Infarction (Men)	121;122;123	1	3	-2 (-67%)	0.149
Acute Myocardial Infarction (Women)		4	5	-1 (-20%)	0.638
Insuficiência Cardíaca (Total)	HDG 127	11	13	-2 (-15%)	0.610
Insuficiência Cardíaca (Men)		7	4	3 (75%)	0.042
Insuficiência Cardíaca (Women)		4	8	-4 (-50%)	0.146
Cerebral Vascular Accident (Total)	HDG 14;15	14	13	1 (8%)	0.665
Cerebral Vascular Accident (Men)		7	5	2 (40%)	0.273
Cerebral Vascular Accident (Women)		7	8	-1 (-13%)	0.774

Explanation: ^a Mortality data by gender not available; GDC – Great Diagnostic Category; HDG – Homogeneous Diagnostic Groups; A – code; B – observed; C – expected; D – excess (95% CI); E – p-value

Source: PTDC/SAU-ESA/73016/2006

3.4. Excess morbidity the 75+ cohort by gender

During the July 2006 heat wave, the admission excess due to all causes was observed, having a statistical significance of only 33% ($p < 0.001$) for the feminine gender.

The increase in the number of admissions for the generality of respiratory causes from individuals of the 75+ cohort was observed only for the feminine gender (140%, $p < 0.006$) during the July 2006 hot period.

This admission excess due to pneumonia in the eldest group occurred, for both genders, of

140% ($p < 0.001$) for men and 117% for women ($p < 0.011$).

In the case of the total number of admissions due to heart failure, in this age group a significant increase for men was observed ($p < 0.042$).

The total of admissions due to circulatory causes, acute myocardial infarction and cerebral vascular accident did not reveal significant increases between genders.

4. Discussion

4.1. Number of heat wave days and daily temperatures

The high heat index values seems to be well correlated with the mortality and respiratory admission excess during a heat wave episode, as in July 2006, characterised by the combination of very high temperatures (from 29°C to 37°C) and relative humidity moderate values (42% to 71%). Besides knowing that thermal sensation in man depends on much more factors than the only two considered here – temperature and relative humidity – we concluded that they are adequate to start a thermal discomfort evaluation. Thermal discomfort, which is liable of being observed (3 days of level II and 5 days of level III) can be explained by the combination of both climatic elements, from which the oscillating apparent temperature between 33 to 47°C resulted. The physiological symptoms associated to the level II of the heat index are sunstroke, muscle cramps, heat exhaustion due to possible prolonged exposure and physical activity, while those from the level III are similar to those from the previous level, with the possibility for the occurrence of heat stroke due to prolonged exposure and/or physical activity. In this study, the use of the heat index constituted an important criterion for the anticipation of respiratory morbidity. It is a warning system that combines temperature with humidity, generating the apparent temperature and respective physiological limits (Kovats, Ebi, 2006). Nevertheless, the human *susceptibility* to extreme events involves a puzzle of local bio-geophysical, social and economic variables that modifies considerably the accuracy of an in-

dex to a specific place. Sometimes those who predicts better the negative impacts in human health are the simpler ones that use only pre-established temperature thresholds (Koppe et al., 2003; Monteiro et al., 2012a, 2012c), while in other examples may be those that include synoptic methods associated to specific air masses or those presenting temporal series models (Kysely, 2004).

4.2. Mortality/morbidity excess (all-ages)

The mortality excess of 52% (107 admissions) and the all causes morbidity excess of 1% (25 admissions), as well as the respiratory morbidity excess of 49% (67 admissions) and circulatory morbidity excess of 6% (14 admissions) that occurred at the Great Metropolitan Area of Porto during the July 2006 heat wave, confirm previous results obtained in other places, namely, in chronic obstructive pulmonary disease and pneumonia (Mastrangelo et al., 2007; Monteiro et al., 2011, 2012b). It referred that the ideal conditions for increasing hospital admissions are gathered in the presence of a sequence of at least four consecutive hot and humid days, with humidex index above 40°C. As the author refers, from the physiological point of view, a respiratory difficulty occurs in result of the accumulation of heat and humidity during time. Simultaneously, the evaporative capacity becomes more reduced, making the organism's sudation and cooling function more difficult. Simultaneously, the evaporation capacity becomes smaller, making it difficult for the sudation and organism's cooling functions to occur (Frota, Schiffer, 1987).

Our results are also consistent with previous studies relating heat waves and mortality due to respiratory diseases (Monteiro et al., 2011, 2012a, 2012c). Some authors showed similar results while revealing the mortality excess due to respiratory causes, during heat wave episodes (Kilbourne, 1999; Rey et al., 2007). Similarly, Huynen et al. (2001) showed a clear relation between the respiratory mortality increase and different heat waves registered in Holland and Hertel et al. (2009) during the 2003 heat wave in Germany. Almeida et al. (2010), while studying the effect of apparent temperature in daily mortality, verified that during a hot season the increase of 1°C in daily average apparent temperature corresponded to the increase of 2.7% in respiratory causes mortality.

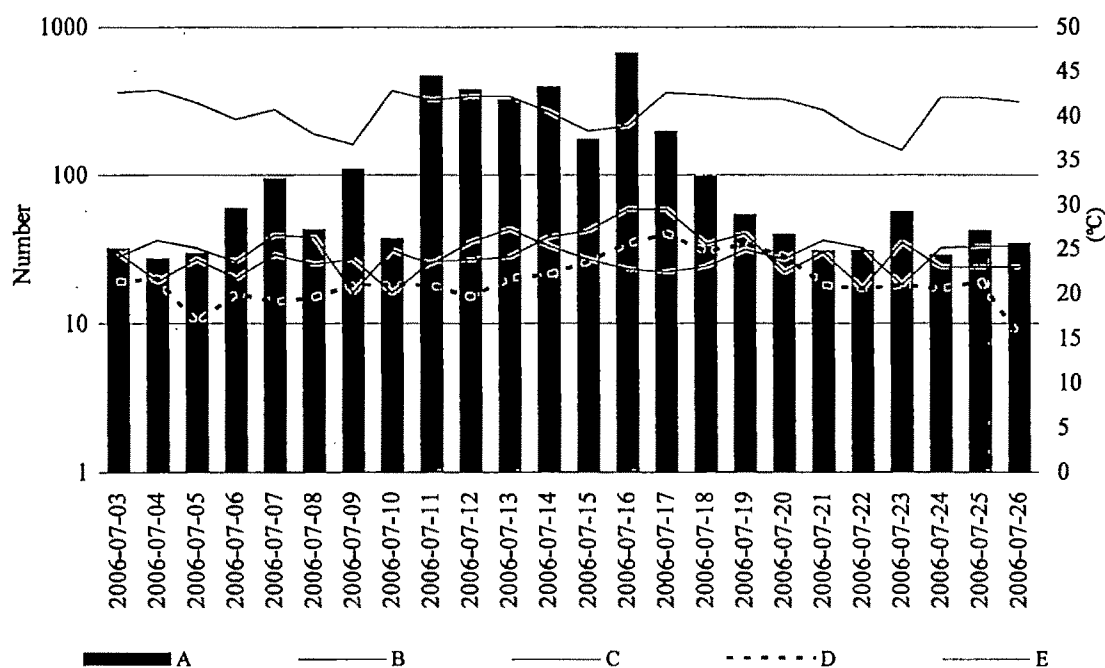


Fig. 1. Number of deaths and admissions for the total population occurred during the extreme heat event (from 11 to 18 July 2006), during the previous week (from 03 to 10 July 2006) and the following week (from 19 July to 26 July 2006)

Explanation: A – heat index; B – deaths, C – admissions (all-causes); D – respiratory admissions; E – circulatory admissions

Source: PTDC/SAU-ESA/73016/2006

4.3. Morbidity excess by gender (all-ages)

The significant admission excess for both genders during the 2006 heat wave, characterised by a high apparent temperature, was perceptible for the generality of the respiratory diseases. In pneumonia admissions, only the masculine gender revealed the hospital admission increase in relation to what would have been expected.

In the generality of circulatory diseases and admissions due to cerebral vascular accidents, a significant increase was observed neither for the total of admissions nor for admissions by gender, relatively to the expected admissions during the heat wave. The admissions due to myocardial infarction and heart failure suffered a decrease. These results seem to agree with other works which highlight a sub-dimensioning of circulatory causes. Studies made in London (Kovats, Ebi, 2006), Veneto (Mastrangelo et al., 2007), Chicago (Semenza et al., 1996; Whitman et al., 1997), Madrid (Linares, Díaz, 2007) and

Holland (Huynen et al., 2001) suggest that there is a short time gap between the exposure to heat and the death due to circulatory diseases. Therefore, the immediate effect of the heat in the human organism will contribute towards the reduction of the individual's hospitalisation.

Our results do not allow a clear distinction between the heat wave's effects by gender and for the generality of the population independently of age, except for the admission excess due to pneumonia for the masculine gender. Other studies (Ellis, Nelson, 1975, Ellis et al., 1975) regarding the evaluation of the effects in mortality in New York in the decade of the 1970s, do also refer the non-observance of differences between genders. However, the mortality excess in France during the 2003 heat wave (Pirard et al., 2005) and in Chicago during the 2005 heat wave (Whitman et al., 1997) were higher among women. Taking into account the differences between the results, the study's consensuality about the effects of heat waves by gender is still not recognised (Basu, Samet, 2002).

4.4. Morbidity excess in the 75+ cohort

Morbidity due to all causes presents an observed admission increase of 22% relatively to the expected in this age group, even though its significance level is reduced.

The results from this study also revealed a significant admission increase for the generality of respiratory diseases (109%), pneumonia (127%) and chronic obstructive pulmonary disease (100%) in the 75+ cohort during the heat wave period.

The hospital admission excess for individuals in this age group due to all circulatory causes, myocardial infarction, heart failure and cerebral vascular accident was not observed. The number of myocardial infarctions and heart failure during the July

2006 heat episode revealed a decrease. This morbidity behaviour in the most fragile individuals, such as the elderly, contributes to corroborate the idea that the intense heat will potentiate immediate death in individuals susceptible to the development of circulatory diseases (Mastrangelo et al., 2007). The heat wave episodes negative effects are more evident in the aged groups, due especially to the impact of temperature in the increase of the blood viscosity, which may produce thrombosis and a deficit in the thermoregulation function (Keatinge et al., 1986). However, other admission causes, such as the respiratory causes, characterised by a larger lag period between the development of the extreme heat episode and the effect produced in the human body evidence a higher vulnerability in individuals from the 75+ cohort.

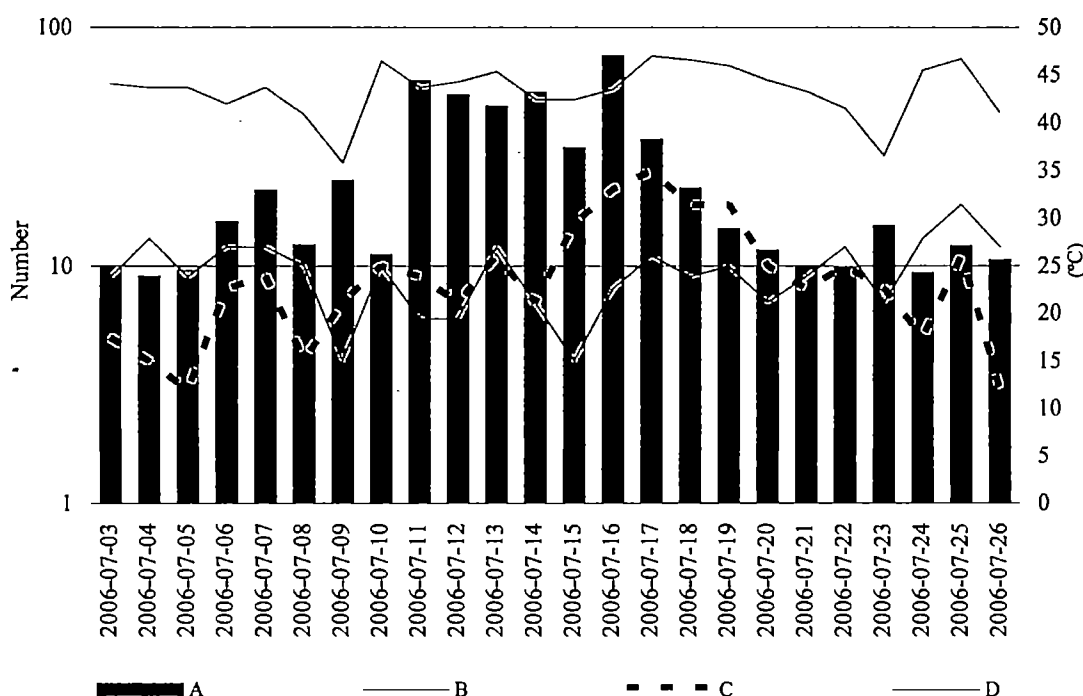


Fig. 2. Number of deaths and admissions in the population with age equal and above 75 years, occurred during the extreme heat event (from 11 to 18 July 2006), during the previous week (from 03 to 10 July 2006) and the following week (from 19 July to 26 July 2006)

Explanation: A – heat index; B – admissions (all-causes); C – respiratory admissions; D – circulatory admissions

Source: PTDC/SAU-ESA/73016/2006

4.5. Morbidity excess in the 75+ cohort by gender

The aged (75+ cohort) morbidity due to all causes is statistically significant for females. Numerous studies show also that the elderly women are the group with the highest mortality proportion in extreme heat situations (Klinenberg, 2002; Whitman et al., 1997). However, the women higher life expectancy than men may be one possible explanation for their higher mortality (Fouillet et al., 2006). Nevertheless, in our analysis this argument is not plausible, once we standardized the population by gender. Women from the 75+ cohort registered a significant increase in admissions for the generality of respiratory diseases and pneumonia. The masculine admission excess for this age group was only significant for admissions due to pneumonia and cardiac failure. One possible explanation for the cardiac failure excess in individuals with advanced age can be the fact that the filling during the left ventricular diastole decreases with age, limiting the cardiac debt and the cardiac frequency during a rest or during physical exercise (Schulman et al., 1992; Kenney, 1997). Other possibility is based on the fact that the age also contributes to the smaller activity of cutaneous vessels, limiting the body's capacity to deviate heat from the centre to the skin in moments of intense heat (Rooke et al., 1994). The risk for heart failure in the elderly from the masculine gender can be due to the fact that this group presents inadequate water consumption during high thermal stress conditions due to heat, which contributes towards a lower adaptation (Semenza et al., 1999).

5. Conclusions

The use of the heat index in the Mediterranean tempered climate, reflected similar effects to the extreme heat episodes in the behaviour of mortality and respiratory morbidity (Monteiro et al., 2012c). However, the circulatory morbidity was decreasing, unlike the respiratory mortality and morbidity. This fact suggests the necessity to investigate the consequences of these events according to their pathological causes, even for mortality or morbidity

simultaneously, once they might demand diversified intervention strategies.

This study still allowed the comprehension of some aspects which characterise the populations' individual vulnerability, namely, the differences observed between general population and the elderly population, as well as between men and women.

One of the constraints in this study results from the fact that it did not include mortality data specified by causes, what complicates the comprehension if the statistical insignificance relative to the admissions due to circulatory causes resulted in the mortality increase due to this type of cause. Accordingly, forward studies could try to understand the influence of high apparent days' temperature in the simultaneous behaviour for morbidity and mortality due to circulatory causes.

In conclusion, this study has demonstrated that, in the context of the Mediterranean tempered climate during high apparent temperature days, the mortality due to all causes and the morbidity due to all respiratory causes, pneumonia and chronic obstructive pulmonary disease significantly increased, not only for the 75+ cohort but also for the general population.

For the group including all ages, the differences between genders were not significant, with the exception for the masculine admission superiority in pneumonia.

Women from the 75+ cohort seem to be the population's most vulnerable group during these days, once morbidity due to all causes increased significantly. However, for this age group some significant differences between genders were registered. Women were the most affected by respiratory diseases as men were by heart failure.

The minimisation of vulnerability must include preventive measures which attribute a special importance to risk groups, which implies the knowledge of the local population's characteristics (Michelozzi et al., 2006). The information transmitted to public in general, and to the risk age groups in particular, assumes high importance. Naughton et al. (2002) suggest the necessity of informing the population about the main symptoms of heat in health. In the case of the population's most vulnerable groups, such as the elderly people and patients, it is fundamental to have daily surveillance to their physical conditions and their environmental context, by

family, neighbours or social assistants. The recognition of the effects of heat in health could contribute towards the modification of risk behaviours, as well as the awareness of physical symptoms in relation to heat could contribute to activate faster intervention mechanisms when emergency situations occur.

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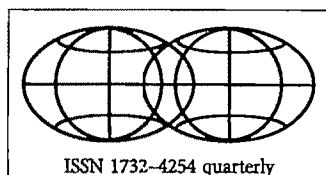
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The concentration of the creative sector firms as a potential basis for the formation of creative clusters in Poland

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Abstract. The study aims to present the structure and analyse the distribution of economic activities comprising the creative sector (covering 10 sections of PKD 2007 – the Polish Classification of Activities based on NACE rev. 2 – the Statistical Classification of Economic Activities in the European Community) of the Polish economy in the context of the potential basis for the formation of creative clusters in Poland. The study concentrates on the numbers of creative firms based in all 3,076 Polish gminas (306 urban gminas, 1,576 rural gminas and 597 urban-rural gminas; in the latter, 597 urban areas and 597 rural areas are considered separately). As found, most of the firms are involved in architectural and engineering activities; technical testing and analysis (M 71) and other professional, scientific and technical activities (M 74). It has also been established that some local incubators of the potential clusters of creative industries form eight distinct centres, the most prominent of which is the Warszawa centre. The identification of areas with higher concentrations of creative firms has demonstrated that in Poland, like in western countries, creative firms tend to locate in large cities (Warszawa, Kraków, Poznań, Wrocław and Tri-City) and in the regions around them.

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1. Introduction

This study aims to present the structure and analyse the distribution of economic activities comprising the creative sector of the Polish economy in the context of the potential basis for the formation of creative clusters in Poland.

The study concentrates on the numbers of creative firms (1) based in all 3,076 Polish gminas (306 urban gminas, 1,576 rural gminas and 597 urban-rural gminas; in the latter, 597 urban areas and 597 rural areas were considered separately). The concentrations of creative firms were established using the location quotient *LQ*.

Some of the questions that the authors address in the article are the following. Does Poland in the current period of socio-economic development have increased concentrations of creative firms from which creative clusters may develop in the future? If yes, where in the country these increased concentrations and conditions conducive to the „birth” of future creative clusters can be found? Which creative activities will be crucial a potential basis for the formation of creative clusters in Poland? Is the location quotient (*LQ*) an adequate tool for identifying and measuring the level of concentration of firms?

2. The creative sector – different views

The creative sector can be viewed from many perspectives. Their range includes social determinants (e.g. *a creative milieu*), economic determinants (e.g. *a creative sector*), legal- administrative and political mechanisms (e.g. policies promoting creativity), or spatial distribution (e.g. clusters of creative industries).

Some of the first studies considering “creativity” with respect to social determinants are studies on regional development published in the early 1980s. Some of them are *Creativity and the renewal of regional life* (Törnqvist, 1983), the studies by the GREMI (Groupe de Recherche Européen sur les Milieux Innovateurs established in 1984) and A. Andersson's study *Creativity and regional development* (1985).

G. Törnqvist (1983: 103) has pointed to *a creative milieu* as an extremely important factor driving the development of particular regions. The *creative milieu* consists of areas having the three major characteristics: a large resource of information and ease of its distribution across the area; a large amount of knowledge amassed over time; and large resources of competencies in particular activities. These three components together underpin creativity, i.e. skills necessary for new forms and values, both tangible and intangible, to be generated.

According to the GREMI researchers, *a creative milieu* is the main reason why particular regions show different capacity for innovation and development. They perceive *a creative milieu* as a concentration of various relationships, mainly informal social relations, plus the degree to which people feel part of and identify themselves with the region. This understanding of *a creative milieu* stimulates all local innovations (Fromhold-Eisebith, 1999).

Another study from the same period that addresses the issue of creativity is *Creativity and regional development* by A. Andersson, who points to the enormous importance of knowledge and creativity for economic development. According to the author, creativity as a social phenomenon mainly develops in regions with the following features:

1. characterised by high levels of competence,
2. with many fields of academic and cultural activity,
3. with excellent opportunities for internal and external communications,
4. that realise which needs remain to be satisfied,
5. where the general structural instability encourages synergic development (Andersson, 1985).

Another perspective on the creative sector can be found within the economic approach that deals, *inter alia*, with the creative industry concept. One of the first studies in this field was *Creative Nation* of 1994 ordered by the Australian government. The document uses the context of cultural globalisation to set the lines for Australia's cultural policy, emphasises that cultural policy is an element of economic policy, indicates that creative industries are the main factor in economic development and employment growth, etc.

The concept of creative industries has reached European countries too. One of them is the United Kingdom, where the Creative Industries Task Force (CITF) at the Department for Culture, Media

and Sport (DCMS) has been involved since 1997 in the mapping of creative industries' activities. For the purpose of the project, creative industries have been defined as branches that develop from individual creativity, skills and talent, and have sufficient potential to create well-being and new jobs based on intellectual property (Cunningham, 2002). The range of branches recognised as creative includes advertising, architecture, the art and antiques market, television and radio, software and computer services, film and video, publishing, design (graphic, interior, industrial, software, fashion), designer fashion, performing arts, crafts, and interactive leisure software (DCMS, 2009).

Looking at the creative sector from the perspective of legal and administrative and political mechanisms, we need to note that the national, regional and local governments developing their economic growth strategies have recently started to give more and more attention to creating environments promoting the accumulation of creative capital.

A reflection of this approach is Germany's "Initiative Kultur-und Kreativwirtschaft der Bundesregierung" centre (<http://www.kultur-kreativwirtschaft.de>), which was established in 2007 to support and bring together all creative sector initiatives in the country (among its coordinators there are the German Ministry of Economy and Technology and the Minister of State for Culture and Media), or development strategies designed by many cities in the world, e.g. Gdańsk (www.gdansk.pl), Hamburg (Behörde für Stadtentwicklung und Umwelt, 2010), Poznań (www.poznan.pl), and Sydney (City of Sydney, 2008). The importance of the creative sector for Europe's socio-economic development has been appreciated by the European Union too. The documents adopted by the EC highlight the need for European countries to expand their creative and innovative capabilities, e.g. 2009 was announced the European Year of Creativity and Innovation (European Commission, 2008).

In the literature, creative sectors are also considered in terms of their spatial distribution. For instance, countries and regions increasingly use the cluster approach in developing studies and plans on socio-economic development and in performing firm location analysis.

M.E. Porter defines clusters as geographic concentrations of interconnected firms, scientific

institutions, specialised suppliers, providers of services, firms in related industries and associated institutions in particular fields that not only compete but also cooperate with one another (Porter, 2000: 15).

The above approaches to clusters show that the development of a creative cluster is determined by both economic and non-economic factors (social, legal and administrative, political, etc.). Therefore, a cluster as an economic creation is characterised by considerable capacity and flexibility.

Many authors stress the importance of creative industry clusters (e.g. Wrana, 2009), pointing to their effect on the course of cooperation between firms in different economic sectors, as well as on a more efficient exchange of ideas. They also bring up the fact that clusters of creative industries mainly utilise and develop intangible values.

The identification of creative sectors has been attempted by many authors (Fritz, Stützer, 2007; Lazzeretti, Boix, Capone, 2008, 2009; Chapain et al., 2010; Harvey, Hawkins, Thomas, 2012), who either based their research on the size of employment in creative industries (Fritz, Stützer, 2007; Florida, Mellander, 2008; Lazzeretti, Boix, Capone, 2008, 2009; Harvey, Hawkins, Thomas, 2012) or used the numbers of creative firms operating in the analysed area (Chapain et al., 2010).

In Poland, cluster studies are a relatively new line of research. They mainly deal with the formation of industrial clusters (e.g. Dziemianowicz, Olejniczak study of 2002 identifying the Warsaw printing cluster – as quoted in Brodzicki, Szultka, 2002), high-tech clusters (Brodzicki et al., 2002) and building industry clusters (Olesiński, Predygiel, 2002).

The above shows that the role of the creative sector as a driver of urban and regional development is increasingly stressed in modern economies (Szymańska, 2009: 56). One of the researchers stressing that creativity underlying the appearance of a new, social class (*a creative class*) whose creativity increases economic value is becoming today one of the key determinants of socio-economic development is R. Florida (2010). His research made him conclude that members of the creative class migrate to places he called activity centres. In his opinion, these centres are the most successful economically today and contribute to their good general indicators of regional development.

3. Materials and methods

The general population of economic entities operating in 3,076 Polish gminas that in 2010 were covered by the REGON system was generated from the Local Data Bank of the Polish Central Statistical Office. From that population, almost 305,000 firms (7.8% of 3,909,802 that operated in Poland) representing creative industries (publishing; motion picture, video and television programme production, sound recording and music publishing; programming and broadcasting; computer programming, consultancy and related activities; information services; architecture and engineering; technical testing and analysis; scientific research and development; advertising and market research; other professional, scientific and technical activities; creative, arts and entertainment activities) were selected for further analysis. The data were then processed with standard software (Excel, MapInfo). The resulting database contained over 40,000 records.

The activity of a creative sector may be assessed from the perspective of its employment, gross value added or the number of firms. Micek (2008) argues that a cluster identification procedure using the number of firms rather than the number of employees enables the exclusion of territorial units where employment is high but there is only one firm.

This study used the location quotient LQ (derived from the numbers of firms) to identify the levels of concentration of firms involved in the creative sector. The quotient is relatively frequently used for the purpose of cluster studies. Although the location quotient (LQ) involves some risk of misinterpretation (Bergman, Feser, 1999) and does not provide an insight into cluster structure and mechanisms (Micek, 2008), it nevertheless allows identifying increased spatial concentrations of firms that may lead to the “birth” of potential creative clusters.

Generally, a location quotient (LQ) is a ratio between a sector's share in the regional economy (a creative sector in this case) and its share in the national economy. The LQ for the creative sector was obtained from the following formula:

$$LQ = (X_k/X)/(Y_k/Y),$$

where

X_k – the number of economic entities in the creative sector (k) in the gmina,

X – the number of economic entities in all sectors in the gmina,

Y_k – the number of economic entities in the creative sector (k) in Poland,

Y – the number of economic entities in all sectors in Poland.

The location quotient (LQ) may take the following values: >1 , 1 , <1 . Its value in excess of 1.25 is assumed to show regional specialisation in the given sector of economy (Brodzicki, Szultka, 2002).

4. Research results: the concentration of the creative sector firms in Poland

The research showed that the 2010 REGON database contained over 3,909,000 economic entities, of which 7.8% (304,900) carried on their activities in the creative sector.

Most creative firms represented activities such as architecture and engineering, technical testing and analysis (M 71; almost 27 % of their total number), as well as other professional, scientific and technical activities (M 74; 23.9%). Firms involved in computer programming, consultancy and related activities (J 62) accounted for 15% of all creative firms; the share of those providing advertising and market research services (M 73) was somewhat smaller – 13.9%. The shares of firms representing the remaining six creative sections (J 58, J 59, J 60, J 63, M 72, R 90) ranged from 0.3 % to 5.9% – see Table. 1.

It is worth noting that the definite majority of the analysed firms, 85.7%, were based in urban areas; only 14.3% chose rural areas for their location. Among the 3,076 gminas covered by this study only 15 (0.5%; 9 rural areas in the urban–rural gminas and 6 rural gminas) did not have any economic entity representing the creative sector.

In order to establish the level of concentrations of firms comprising the creative sector in Poland, the location quotient LQ was computed for 3,076 territorial units of administration (i.e. all Polish gminas), (Fig. 1). Its values ranged between 0.0 and 1.85.

Table 1. The numbers of economic entities classified as creative organisations in PKD 2007

	M		W		Σ	
	a	b	a	b	a	b
J 58	13,796	5.3	1,441	3.3	15,237	5.0
J 59	9,525	3.6	1,544	3.6	11,069	3.6
J 60	913,000	0.4	53,000	0.1	966,000	0.3
J 62	39,865	15.2	5,869	13.5	45,734	15.0
J 63	12,191	4.7	1,759	4.0	13,950	4.6
M 71	70,401	26.9	11,659	26.9	82,060	26.9
M 72	2,395	0.9	298,000	0.7	2,693	0.9
M 73	37,343	14.3	5,153	11.9	42,496	13.9
M 74	61,377	23.5	11,500	26.5	72,877	23.9
R 90	13,685	5.2	4,146	9.5	17,831	5.9
K total	261,491	100.0	43,422	100.0	304,913	100.0

Explanation: M – urban gminas and towns in urban–rural gminas; W – rural gminas and rural areas in urban–rural gminas; a – the number of economic entities; b – as a percentage of all economic entities in the creative sector; J 58 – publishing; J 59 – motion picture, video and television programme production, sound recording and music publishing; J 60 – programming and broadcasting; J 62 – computer programming, consultancy and related activities; J 63 – information services; M 71 – architecture and engineering; technical testing and analysis; M 72 – scientific research and development; M 73 – advertising and market research; M 74 – other professional, scientific and technical activities; R 90 – creative, arts and entertainment activities; K – creative sector

Source: Developed by the authors based on the Local Data Bank of the Central Statistical Office

The research found 2,889 gminas (93.9% of their total number) with *LQ* below 1.0 and 143 gminas (4.7% of the total number; 2.8% of the country's area) where *LQ* values ranged from 1.00 to 1.25; in the remaining 44 gminas the *LQ* varied between 1.25

and 1.85 (Warszawa). This last range of *LQ* values (>1.25) reveals regional specialisation in the creative sector (61.4% of the gminas are towns; 15 cities of them have populations in excess of 100,000) – see Fig. 1 and Table. 2.

Table 2. *LQ* values calculated for 44 territorial units – a potential basis for the formation of creative clusters in Poland

<i>LQ</i>	1.85	1.71–1.80	1.61–1.70	1.51–1.60	1.41–1.50	1.26–1.40
A	Warszawa	Podkowa Leśna	Kraków, Poznań, Rzeszów, Wrocław	Opole, Sopot	Boguchwała, Gdańsk, Gliwice, Katowice, Zielona Góra	Bielsko-Biała, Gdynia, Kielce, Lublin, Łańcut, Milanówek, Olsztyn, Skierniewice
B			Łomianki	Nowa Sarzyna, Piaseczno	Brwinów, Halinów	Wieliczka
C		Piaseczno			Konstancin-Jeziorna, Pruchnik, Zabierzów	Dobra
D					Brwinów, Dopiewo, Izabelin, Kobierzyce, Michałowice, Nieporęt, Tarnów Opolski, Zielonki	Dywity, Jabłonna, Prażmów, Suchy Las

Explanation: A – urban gminas, B – towns in urban–rural gminas, C – rural areas in urban–rural gminas, D – rural gminas

Source: Developed by the authors with data from the Local Data Bank of the Central Statistical Office

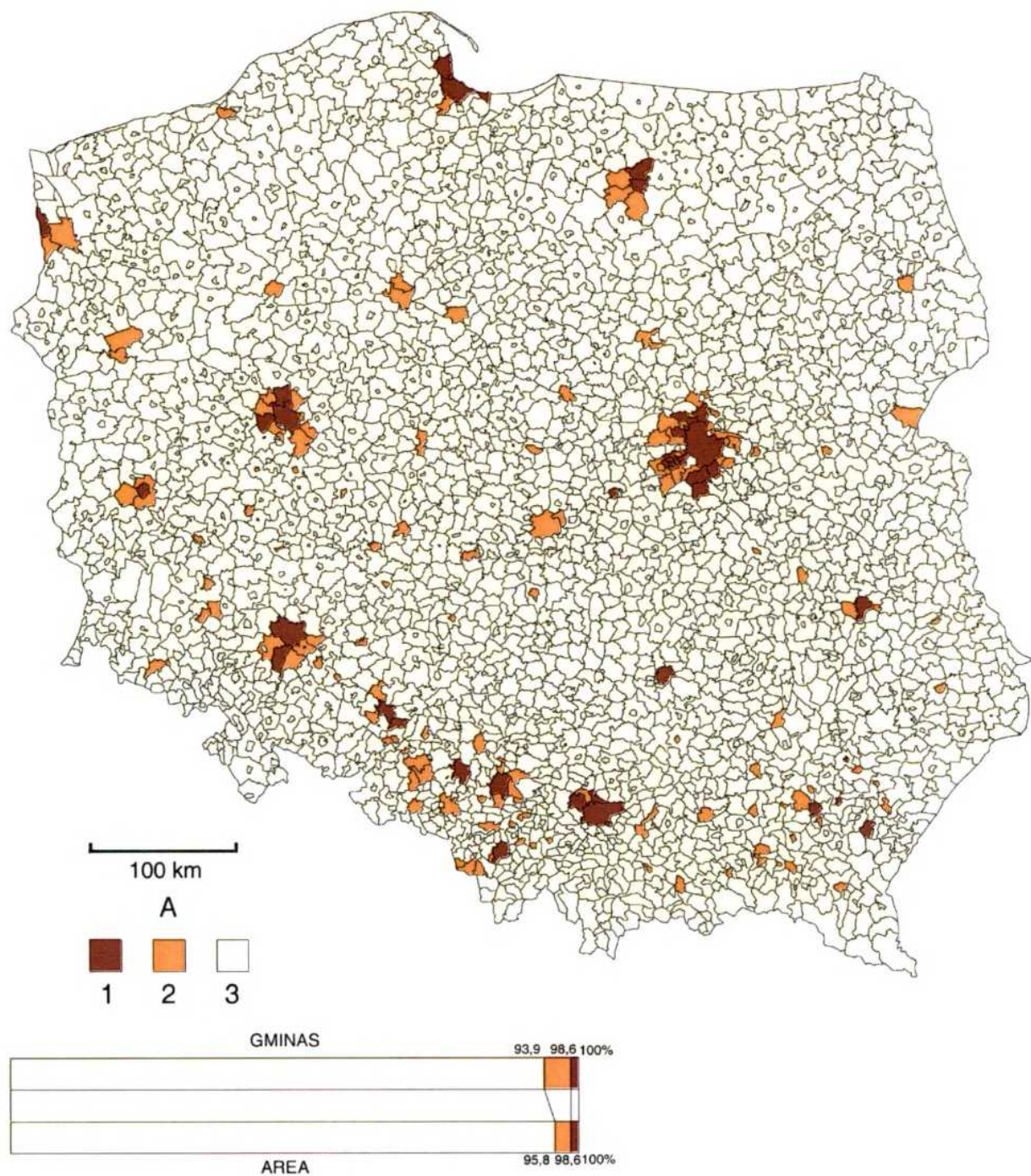


Fig. 1. LQ values calculated for the creative sector in Poland by gminas in 2010

Explanation: A – the location quotient: 1– $LQ X < 0.00-1.00>$, 2– $LQ X (1.00-1.25>$, 3– $LQ X (1.25 - 1.85>$

Source: Developed by the authors based on the Local Data Bank of the Central Statistical Office

Gminas where LQ values range from 1.25 to 1.85 account for 1.4% of all Polish gminas and occupy 1.4 % of the country's territory. It is worth noting at this point that over one-third of the aforementioned 143 gminas (54 gminas – 38%) border directly or

indirectly on areas with increased concentrations of creative firms. Therefore, there are 44 gminas with LQ values in the 1.25–1.85 range that are adjacent to 54 gminas with LQ values between 1.00 and 1.25 where clusters of creative activities may devel-

op in Poland in the future. These areas have higher concentrations of creative firms, so there are more opportunities for similar firms to enter into cooperation and for creative clusters to grow

Only 44 of the investigated Polish gminas can be said to have higher concentrations of creative firms. Most of these gminas have common borders and form 8 distinct areas of Warszawa (Brwinów, Halinów, Izabelin, Jabłonna, Konstancin-Jeziorna, Łomianki, Michałowice, Milanówek, Nieporęt, Piaseczno, Podkowa Leśna, Prażmów, Warszawa), Kraków (Kraków, Wieliczka, Zabierzów, Zielonki), Poznań (Dopiewo, Poznań, Suchy Las), Tri-City (Gdańsk, Gdynia, Sopot), Olsztyn (Dywity, Olsztyn), Opole (Opole, Tarnów Opolski), Rzeszów (Boguchwała, Rzeszów), and Wrocław (Kobierzyce, Wrocław), but there are also 11 single gminas of Bielsko-Biała, Dobra, Gliwice, Katowice, Kielce, Lublin, Łańcut, Nowa Sarzyna, Pruchnik, Skierniewice, and Zielona Góra. Indeed, there are already *Synerg IT* Klaster Informatyczny (the *Synerg IT* cluster) and Wielkopolski Klaster Firm Projektowo–Wykonawczych *ARCHI-PROJEKT* (the Wielkopolska Cluster of Design and Building Firms *ARCHI-PROJEKT*), which were established in the Poznań area in, respectively, 2010 and 2011; Klaster *Europejskie Centrum Gier* and Klaster Informatyczny *Trident Sp. z o.o.* (the *European Game Centre* and the *Trident Sp. z o.o.* IT cluster), which appeared in the Kraków area in 2011; and Klaster Firm Informatycznych Polski Wschodniej (the Cluster of Eastern Poland's IT firms) formed in the Rzeszów area in 2012.

5. Conclusion

Most creative firms in Poland are involved in architectural and engineering activities, technical testing and analysis, and other professional, scientific and technical activities. They represent in total as much as 50.9 % of all creative firms.

The location quotient (*LQ*) used in the research has proved an adequate tool for identifying and measuring increased concentrations of creative firms. The research results have showed that cluster initiatives undertaken within creative industries covered by the PAED database (the Polish Agency for Enterprise Development) are rational.

The identification of areas characterised by higher concentrations of creative firms has demonstrated that in Poland, like in western countries, this type of firms tends to locate in large cities (Warszawa, Kraków, Poznań, Wrocław and Tri-City) and in the regions around them.

The purpose of the study was to identify which Polish gminas may be the sites of creative industry clusters in the future. It is one of the first studies investigating the locations of all creative firms in all Polish gminas. The future research setting out to identify creative clusters in the country should consider additional criteria of economic nature, for instance the number of employees and gross value added generated by creative firms, and investigate the relationships between particular firms. Considering the limited availability of reliable and quantifiable data, the task seems quite complicated.

Notes

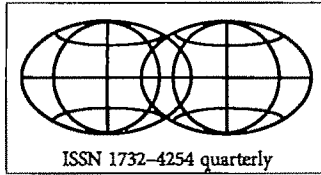
- (1) publishing; motion picture, video and television programme production, sound recording and music publishing; programming and broadcasting; computer programming, consultancy and related activities; information services; architecture and engineering; technical testing and analysis; scientific research and development; advertising and market research; other professional, scientific and technical activities; creative, arts and entertainment activities (determined from PKD 2007, i.e. the Polish Classification of Activities which is based on NACE rev. 2, the Statistical Classification of Economic Activities in the European Community; see Eurostat, 2008: 80–89).

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The development and structure of industry in the district of Bağcılar, Istanbul

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Abstract. As a part of Istanbul Metropolis, Bağcılar has been one of the leading centers of developments in parallel with the developments in outward-oriented economy and industrialization in the 1980's in Turkey. After these years of experiencing rapid urbanisation and industrialisation, the district has taken a look far from its earlier appearance. During this period of migration from suburbs to the cities, one of those who took the biggest share is Bağcılar. The purpose of this study is to determine the historical development of industrialization in Bağcılar and the causes of this development, its structure, and its sectors distribution. As an operation of a regional industry, this study handles the features of Bağcılar District Location, the factors that affect the industry in the District, the sectors distribution of industry and environmental issues.

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1. Introduction

Istanbul Province is located in the Marmara Region in the northwest of Turkey, on the two sides of the Bosphorus, where Asia and Europe come the closest. The Province of Istanbul is composed of a total of 31 districts, 29 of which are in Europe, and 10 on the Asian Continent. Bağcılar district is one of them and it which constitutes the field of study. Bağcılar District is located in the Marmara Region; on the European side of Istanbul and within the boundaries of Istanbul Metropolitan Municipality. The district is surrounded by Küçükçekmece to the west, Bahçelievler to the south, Güngören to the southeast, Başakşehir to the northwest, and Esenler to the east and north (Fig. 1).

The purpose of this study is to determine the historical development of industrialization in Bağcılar and the causes of this development, its structure, and the distribution of its sectors. As it is an example of the operation of a regional industry, this study deals with the features of Bağcılar District Location, the factors that affect the industry in the District, the distribution of the sectors of industry and environmental issues.

The paper uses data collective from Bağcılar Municipality, Turkish Statistical Institute (TSI), Turkey Employment Agency (TEA), Istanbul Chamber of Industry (ICI).

The intensification and spread of economic activities in different fields is the result of the functional relationship of economic factors with each other. Thus, main locations are composed where the economic activities are condensed, and these main locations reach the status of centres that attract all kinds of economic activities. In Turkey the most important centre in which the economic activities are condensed is Istanbul (Mutluer, 1995: 1). Industrial plants firstly develop from the interior portions of the cities, then spread around the city, and so encourage the spread of cities territorially (Tümertekin, 1984: 109–128). In Turkey, in large cities such as Istanbul, new areas are opened for new industrial activities often located at the edges of cities and agricultural areas, old recreational areas, and suburbs (Özgüç, 1986–1987: 135). As a result of the rapid and unplanned urbanization and increase in land prices – which has been taking place

since the second half of the 1980's, decentralization movements started, and the industrial facilities in Istanbul began to move out of the town (Karakuyu, 2008: 21–49).

The research area is located in the Çatalca-Kocaeli part of the Marmara Region, on the European side of Istanbul, within the boundaries of Istanbul Metropolitan Municipality. Until the last 25–30 years, there was vegetable (crop) production in Bağcılar where 72% of the land was arable and people were sold their produce and bred animals in order to live. The industrialization movement, which initiated the establishment of factories in the district in the years of 1956, 1959 and 1962, developed rapidly in parallel with the development in industrialization and the open economy in Turkey after the 1980's. Bağcılar district which is part of Istanbul, being the most significant province with regard to development and sophistication, has more than 5% of the industrial facilities within its boundaries. Bağcılar district is among the top five districts, where there is intensive industry. By the year 2010, there were 710 industrial facilities registered at the Istanbul Chamber of Industry in Bağcılar. The majority of these facilities are in Bağcılar, Evren, Mahmutbey and Güneşli neighbourhoods which make up the Western part of the district because of the E–5 highway.

As a part of Istanbul Metropolis, Bağcılar has been one of the leading centres of developments in parallel with the developments in outward-oriented economy and industrialization in the 1980's in Turkey. After these years of experiencing rapid urbanisation and industrialisation, the district has taken on a look far from its earlier appearance. During this period of migration from the suburbs to the cities, one of those who took the biggest share is Bağcılar.

Bağcılar, the date of whose settlement goes back to very old times, was formed as a result of the migration of 63 households, from Varna, Bulgaria in 1929, who bought 17,000 acres of farm land known as Çiftiburgaz. During this period, due to the distribution of seedlings provided by the state to the public, this region with over forty varieties of grapes grown in vineyards and with some famous species, was named after Bağcılar. Also, currently, 24th Street in Central District and Devekaldırımı Street are located on the Silk Road route.

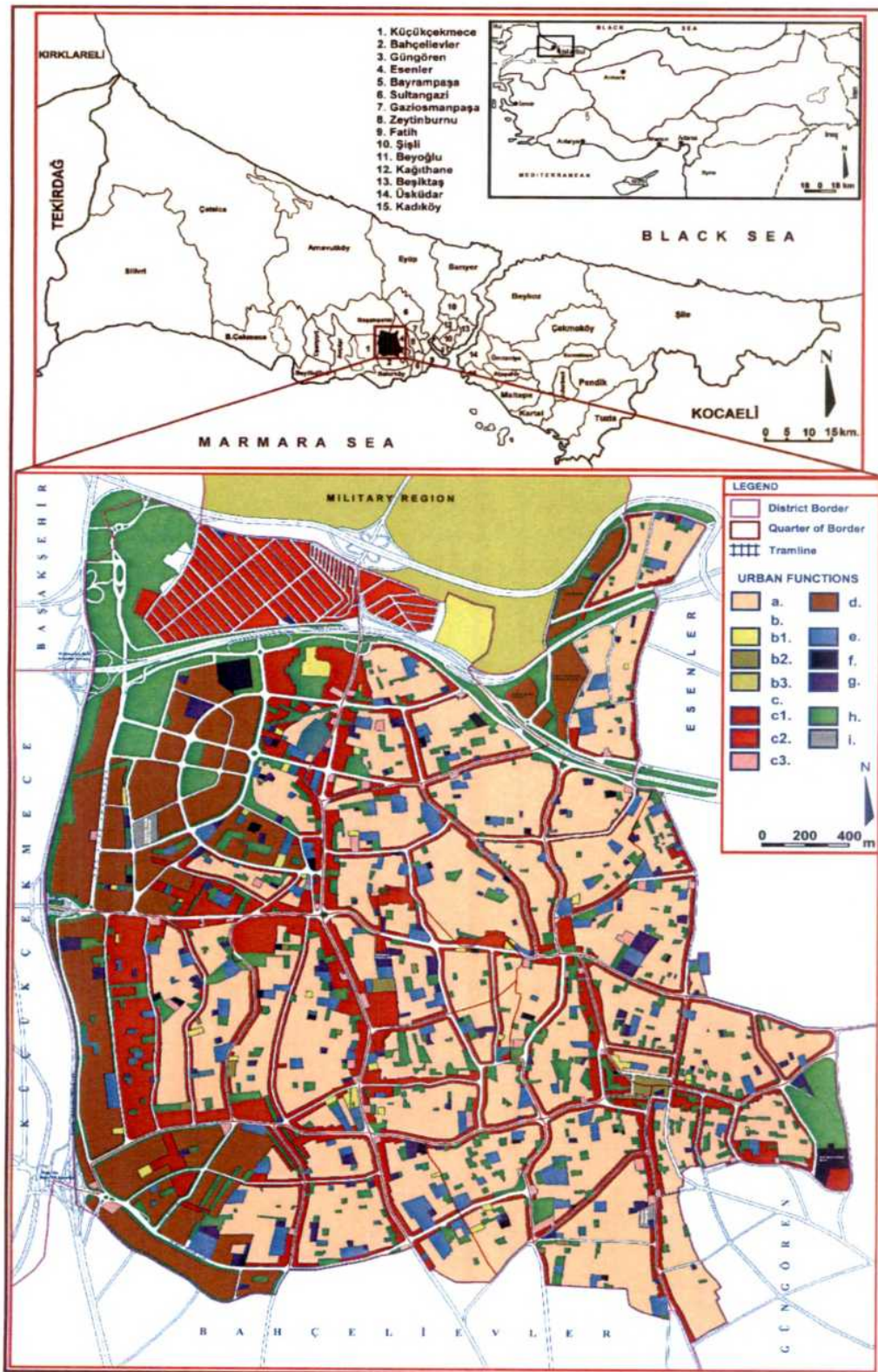


Fig. 1. Location map of Bağcılar District and urban functions

Explanation: a. – residential areas (housing), b. – official areas, b1. – administrative areas, b2. – municipality areas, b3. – military areas, c. – trade areas, c1. – business, c2. – ISTOC business center, c3. – other trade areas, d. – industry areas, e. – education areas, f. – health areas, g. – social areas, h. – parks, gardens and forest, i. – cemetery

Source: Bağcılar Municipality 2011

Bağcılar is one of the villages of Mahmutbey County where the Greek population lived during the Ottoman period. During this period, there were 11 (1) villages connected to Mahmutbey County, which is one of the oldest settlements in İstanbul (2). Each of these villages, which are today urban centres, looked like small villages until the 1950s. At the same time, each of these villages, which were established on a separate ridge, has grown up and integrated by merging in the valley.

Bağcılar district was founded by combining the four regions (Mahmutbey, Güneşli, Kirazlı and Bağcılar) connected to Bakırköy in 1992. These are Kalfa Köy (Mahmutbey), Papazçiftliği (Güneşli), Aypa (Kirazlı) and Çiftburgaz (Bağcılar) settlements, which constituted the basis of the district. In these villages, which served as the first settlements in Bağcılar, the economy was totally agriculture-based in previous times. In the villages, families who were engaged in farming made their living from raising produce including especially grapes, wheat, barley, oats, corn, watermelons, cantaloupes, cherries, Figs, walnuts, plums and peaches. Farmers marketed this produce and bred cattle, goats and sheep.

One of the country's economic activities, the motor of development and globalization, is industry. Investigation of the Industrial activities geographically implies ordering the main geographical aspects of industrial activities under three titles: distribution scheme, their interactions with various elements in the area they settled, their relationships to

other districts. As well as its contribution to the urban economy, industrial production has important effects on urban structure in the context of industrial activities, site selection and their relationship with each other. Industrial activities accelerate due to the technological advances basically, new developing technological structures create important effects on processes of production, and the position and range of manufacturing units change.

In Turkey regional distribution of industrial establishments is not balanced, and 51.8% of industrial added value is concentrated in the Marmara Region. Industry in İstanbul has a very important place in the industrial sector of Turkey. İstanbul province, although it makes up only 7 per thousand in the area of Turkey, is a major metropolitan area which contains approximately 18% of the population. By 2010 22,595,000 people were employed in various sectors in Turkey. 17.5% (3,947,000) of Turkey's employed population is located in İstanbul. According to the distribution of employed population in Turkey on a sector basis, İstanbul province contains 26.6% of the industrial sector, 21.4% of the service sector and 0.3% of the agricultural sector (Table 1). 0.4% of the active population in agriculture, 39.9% of industry and 59.7% of the service sector are working in the province of İstanbul. The province of İstanbul carries out 50.6% of Turkey's total foreign trade, 46.7% of total exports and 53% of total imports. 43% of the 500 largest industrial establishments in Turkey are also in İstanbul (ICI, 2010; TSI, 2010).

Table 1. The population employed in Turkey and status of the İstanbul Province (x1000)

The population employed	Agriculture	Industry	Service	Total
İstanbul province	16	1,577	2,354	3,947
%	0.5	39.9	59.6	100
Turkey	5,683	5,927	10,985	22,595
%	25.1	26.2	48.7	100
The share of İstanbul in Turkey %	0.3	26.6	21.4	17.5

Source: Turkish Statistical Institute 2010

Industrial facilities in the province of İstanbul are mostly located in organized industrial zones and due to unplanned construction they are located within settlement areas. While 76% of industrial establishments are located on the European side

and 24% of them are located on the Asian side. On the European side İkitelli, Beylikdüzü, Hadımköy and Kiraç, on the Anatolian side Tuzla and Ümraniye zones are areas where industrial facilities are concentrated. According to the distribution of in-

dustrial facilities in urban areas in the province of Istanbul, Büyükçekmece and Küçükçekmece districts share first place with 9% and these districts are followed by Şişli and Güngören with 6%, Bağcılar, Zeytinburnu, Kağıthane and Bayrampaşa 5% and Gaziosmanpaşa with 4%. Bağcılar district is in the first 5 districts in which industry is concentrated.

According to industrial sectors in Istanbul and the employed population in these sectors, the garment and apparel industry is important at a rate of 29% and this sector is followed by metal products (11%), and machinery and equipment (8%) together with the plastic and rubber industry. Looking at the employment rates in these sectors, the apparel and garment industry still leads and this sector is followed by textiles (9%), food (7%), and land and sea vehicles (7%) (ICI, 2010).

2. Factors affecting industry in Bağcılar District

One of the most important features of modern industry is the need for a location which will provide raw materials economically. But today, raw materials can be provided easily due to the development of transportation systems, complex industrial establishments and technological developments. Manpower and the market are other important factors (Tümertekin and Özgüç, 2005: 433). A reason for the establishment of industrial facilities in Bağcılar is not to be close to sources of raw materials, but to be close to the market, sector specialization and transport possibilities. Especially as in the study area, the location factor is eliminated slowly due to obtained energy from an interconnected system.

Despite intensive mechanization, in modern industry the availability of a qualified labour force and its costs are still an important factor (Tümertekin and Özgüç, 2005: 434). In general, industrial branches provide for a large number of people to be hired. A qualified workforce is important for efficiency and also it is the group who can use modern tools and equipment in industry. In addition, the industry's commitment with a large force of labour has led to the establishment of a linear relationship between industrial activities on earth and population density.

According to the year 2010 Address Based Population Census, Turkey's total population is 73,722,988.

The province of Istanbul constitutes 18% (13,255,685) of the population of Turkey. Bağcılar, Küçükçekmece, Ümraniye, Bahçelievler, Pendik are Istanbul's most populous districts in terms of the amount of the population. Bağcılar District contains 5.6% (738,809) of this population. 68% of the total population in the district of Bağcılar is the active population (TEA, 2010). In Bağcılar, according to the distribution of population by age groups in a wide range, 29.2% of population consists of children (0–14), 65.5% of population consists of adults (15–64), 3.3% of population consists of elderly people (65 and older) (TSI, 2010).

By 2000 in Bağcılar, the population density was 25,278 to sq km, by 2010 the population density increased to 33,582 to sq km. According to the population density of neighbourhoods in 2010, the highest population density areas are Yenigün, Çınar, Yıldıztepe and Fatih neighbourhoods. Minimum population density areas are Mahmutbey, Bağlar, Evren neighbourhoods, where intensive industrialization is located (Table 2).

Transportation is an indispensable element for development in a country, region, province or district. On the one hand, supply of raw materials, and on the other hand easy transport of finished products are main factors for development of industrialization. For this reason, one of the most important factors for both the establishment and development of industrial facilities is easy transport by sea, road, rail and even air transport (Atalay, 2005: 201). In addition, transport of the workers to facilities is possible in a fast organized and efficient way. In Bağcılar, the main factor of development of industry is transportation.

To be located in the Marmara Region which is the most developed area of Turkey in terms of transportation and to be in Istanbul province provides great benefits to Bağcılar. The district is located between Turkey's most important highway M–80 (TEM)'s O–2 route and south–west and north–east of express links of the E–100 (the old E–5) which is established between Edirne– Ankara. In addition, Mahmutbey highway, which is the most important second transport route of Istanbul, is in the northern border (Fig. 1). In the district, local transportation is also well developed and the roads are connected to specified streets. Although there is no coastline in Bağcılar, transportation is easy to Istanbul's major ports (3) and airports thanks to highways.

Table 2. In Bağcılar District population distribution and density of neighbourhoods

Name of Neighbourhood	Population	Area (km ²)	Density (person/km ²)
Yenigün	25,949	0.3	86,496
Çınar	38,638	0.5	77,275
Yıldıztepe	42,929	0.6	71,548
Fatih	47,001	0.7	67,144
Kemalpaşa	38,512	0.6	64,186
İnönü	26,510	0.5	53,019
Sancaktepe	20,417	0.4	51,042
K.Karabekir	25,027	0.5	50,054
Demirkapı	53,074	1.1	48,249
Kirazlı	43,387	0.9	48,208
Yavuz Selim	28,274	0.6	47,123
Barbaros	18,181	0.4	45,452
Yeni	35,433	0.8	44,292
Hürriyet	25,590	0.6	42,650
Fevzi Çakmak	32,293	0.8	40,366
Yüzyıl	52,029	1.3	40,023
Güneşli	40,289	1.2	33,574
Merkez	25,710	0.9	28,566
Göztepe	34,924	1.3	26,865
Evren	46,210	1.9	24,321
Bağlar	13,454	1.4	9,610
Mahmutbey	24,979	4.7	5,315
Total	738,809	22	33,582

Source: Bağcılar Municipality and Turkish Statistical Institute 2010

Industrial plant construction requires a large amount of capital in terms of raw materials, machines and other needs, transportation and marketing execution services, workers' payment, etc. In other words, large industrial facilities are being set up and existing capacity is expanded at the centres of capital (Atalay, 2005: 203). In Bağcılar district, existing industrial facilities belong to private sectors and they have been established with entrepreneurs' own capital. With globalization, in today's modern industry, foreign funds invest and establish various partnerships in another country. In Bağcılar, USAŞ (Aircraft Service Inc.), which is operating in the food industry, is a part of the world's largest independent airline catering company with its 97 units in 28 countries (4). Various industry facilities which

are operating in the district have been evaluating their capital in different countries. One of these industrial institutions is Ayka Textile and it has activities in Ethiopia.

The aim of industry is to produce goods in order to sell them (Tümerterkin and Özgüç 2005: 437). In other words, the sale of produced goods, namely marketing, is one of the important criteria that should be taken into consideration in the establishment of industry (Atalay, 2005: 200). In any country, region, province and district, the sale of manufactured goods in the production area or foreign selling at reasonable prices, exports need to be done for development of industry. There is an important relationship between the distribution of industrial establishments and the market. For these reasons,

the Marmara Region has become the most important area with the most intensive industrial activities (Atalay, 2005: 200).

Bağcılar is located in the middle of the market due to its location. The most important of these markets is Istanbul province and its hinterland. There are 710 large and small industrial facilities in the district. These facilities cater for national and international markets outside the local one. In particular, the companies producing textiles, apparel and leather, paper and paper products and the printing industry, metal products, machinery equipment, transport vehicles, etc. have an important place in the international market outside national markets. Some of these companies are İçdaş, Zıylan Shoes, Çak Textile, Ayka Textile, Taner Triko, Taha Clothing, Hey Textile, Kama Pres, Kanca Hand Tools and Dövme Steel. Branding is another element in the industrial sector. In this context, Zıylan Shoes has formed its own brands by buying the rights of Polaris, Kinetix, Flogart, Proshot Torex, Halley and Rootless. Also Çak Textile and Taha Clothing have formed their own brands buying the rights of LTB by Little bigs and LcWaikiki, a French brand in 1997, respectively.

3. Industrial development of Bağcılar District

In the research area, 710 manufacturing industry establishments are still active. In these industrial facilities, while 48.5% of them (344) have under 25 employees people, 51.5% of employers (366) are medium–large scale industrial facilities over 25 employees. According to the establishment of these facilities, 655 of them (92.3%) were established after 1980, and 55 of them (7.7%) before 1980 (Table 3). In Bağcılar, 92.1% of medium–large industry establishments and also 92.5% of small scale (5) establishments were opened after 1980. Medium and large industrial establishments which employ 25 and over increased in the period 1990–2000, and small industrial establishments which employ 25 and under increased in the period 2000–2010 (Table 3). The economic crises in Turkey and the world between the years 2001 and 2008 had negative effects on both large and small industrial establishments, but these crises led to downsizing in very large establishments, and some of them even closed down. Insufficient land and shifting out of city centers are also causes of that downsizing.

Table 3. Distribution of industrial facilities in Bağcılar District

Establishment Period	25 Employees and over		25 Employees and under		Total	
	A	%	A	%	A	%
1950 – 1960	2	0.5	–	–	2	0.3
1960 – 1970	8	2.2	5	1.4	13	1.8
1970 – 1980	19	5.2	21	6.1	40	5.6
1980 – 1990	82	22.4	24	7	106	15
1990 – 2000	151	41.3	142	41.3	293	41.3
2000 – 2010	104	28.4	152	44.2	256	36
Total	366	100	344	100	710	100

Explanation: A – Number of establishments

Source: Istanbul Chamber of Industry 2010

In the district, according to the history of establishment of industrial establishments with 25 employees and over, there can be seen the opening of 1% in 1950–1960, 2% in 1960–1970, 5% in 1970–1980, 22% in 1980–1990, 41% in 1990–2000, and

29% in 2000–2010. These values show that industrialization of Bağcılar is in a rapid increase from the past to the present but the 12% reduction in facility numbers attracts attention in the period 2000–2010. Almost half of industrial facilities in Bağcılar

were opened in 1990–2000. In 1992, Bağcılar became a district and this is the biggest factor in the intensification of industry. The new status of the district of Bağcılar affected positively small industrial establishments and 85% of these establishments were opened after 1990 (Table 3).

3.1. Industry before 1980

In Turkey, the establishment stage of industry began in the first years of the Republic. After the 1950's, development of transportation opportunities, accompanied by an increase in population migration from rural areas to cities and the potential of the workforce in towns, as well as the government sector increasing the private sector and its investment in industry enabled the development and diversification of industry. This movement from the 1950s has continued to the present with various ups and downs.

The development of industrialization was much more felt in Istanbul. Especially the industrialization movement after the 1950s led to intensive migration from rural areas to Istanbul. The population coming from rural to urban areas began to settle in back parts of the city. Our study area, Bağcılar has been home for this population which came from rural to urban areas. Especially with the intensive migration in the 1970s, in parallel with developments in industry, in 1975 a municipality was established in Bağcılar, but this situation did not last long and the status of town was withdrawn in the 1980 military coup. Afterwards, in 1992 it gained both the municipal and district status. Population growth accelerated even more after this period, and it has grown along with industrialization.

According to the Istanbul Chamber of Industry, in Bağcılar between 1950–1960 there were 2 large business, in the period 1960–1970, 8 large and 5 small businesses, so a total of 13 and in the period 1970–1980, 19 large, 21 small for a total of 40 companies which were established. In total 55 plants were established before 1980 and 7.7% of the established facilities were opened before 1980. These facilities consist of 29 medium and large establishments and 26 small establishments. According to the sectoral distribution of these industrial establishments, the textile, apparel and leather indus-

try ranks first with 19 establishments (11 of them are large industries) and industries producing metal products, machinery equipment, transport, scientific and professional measuring instruments follow this sector with 14 establishments (6 of them are major industries). With 7 establishments (5 of them are major industries) is the paper and paper products and printing industry, with 6 establishments the base metal industry and 4 chemical establishments, while the petroleum, rubber and plastic products sector follows all. During this period, the food, drink and tobacco industry, wood products and furniture industry, stone and land-based industries, information technology are ranked in the last positions (Table 4 and 5).

In Bağcılar, Iron and Steel Industry Plant facilities operating during this period were the first, when it was established in 1956. Again during this period, for paper and paper products and the printing industry Altın Kitap Publishing House, which was established in 1959, for textile, apparel and leather industries Öğretmen Hosiery Factory which was established in 1962, for metal products, machinery equipment, transport, scientific and professional measurement devices the Motorsan Motor Industry which was established in 1969 and for the chemical, petroleum, coal, rubber and plastic products industry Yıldız Plastic which was established in 1969 are the first established industries. Bağlar, Mahmutbey, Evren and Güneşli neighborhoods are the centres where the industry developed before 1980 (Fig. 2).

In industrial establishments which were established before 1980, with 2,300 employees İçdaş Steel which was established in 1970 and produces iron and steel, with 1,057 employees, Edip Yarn which was established in 1971 and produces yarn manufacturing are facilities which have the most number of employees compared with other facilities in Bağcılar. In addition, Matraş Leather Industry with leather and fur production, Broderi Delicate Embroidered Fabric Industry with tulle, lace and embroidery, Hürriyet Journalism with printing and publishing activity and Orjin Leather Garment with fur apparel production are other important facilities which have over 300 employees. Furthermore, in the facilities which were established before 1980, there are 10 facilities which have over 100 employees.

Table 4. In Bağcılar District distribution of industrial facilities (which employ 25 and over by sectors)

Manufacturing Sectors	Before 1980		1980–1990		1990–2000		2000–2010	
	A	%	A	%	A	%	A	%
Manufacture of food, beverages and tobacco	–	–	4	4,9	9	6	3	2.9
Textile, wearing apparel and leather	11	38	48	58.5	98	65	80	77
Manufacture of wood and wood, products including furnitures	–	–	2	2.4	1	0.7	2	1.9
Manufacture of paper and paper products, printing and publishing	5	17.2	11	13.5	16	10.6	9	8.7
Manufacture of chemicals and chemicals of petroleum, coal, rubber and plastic products	1	3.4	4	4.9	4	2.6	4	3.8
Manufacture of non metallic mineral products except products of petroleum and coal	–	–	2	2.4	4	2.6	–	–
Basic metal industries	6	20.7	1	1.2	1	0.7	–	–
Manufacture of fabricated metal products, machinery and equipment, transport equipment, professional and scientific and measuring and controlling equipment	6	20.7	10	12.2	10	6.6	3	2.9
Information industry	–	–	–	–	4	2.6	1	0.9
Other manufacturing industry	–	–	–	–	4	2.6	2	1.9
Total	29	100	82	100	151	100	104	100

Explanation: A – Number of establishments

Source: Istanbul Chamber of Industry 2010

Table 5. In Bağcılar, Distribution of Industrial Facilities (which employ 25 and under by sectors).

Manufacturing Sectors	Before 1980		1980–1990		1990–2000		2000–2010	
	A	%	A	%	A	%	A	%
Manufacture of food, beverages and tobacco	2	7.7	0	0	6	4,2	5	3.3
Textile, wearing apparel and leather	8	30.8	13	54.2	75	52.8	91	59.9
Manufacture of wood and wood, products including furnitures	1	3.8	0	0	4	2.8	2	1.3
Manufacture of paper and paper products, printing and publishing	2	7.7	2	8.3	14	9.8	12	7.9
Manufacture of chemicals and chemicals of petroleum, coal, rubber and plastic products	3	11.6	6	25	20	14.1	14	9.2
Manufacture of non metallic mineral products except products of petroleum and coal	1	3.8	0	0	0	0	2	1.3
Basic metal industries	0	0	0	0	3	2.2	0	0
Manufacture of fabricated metal products, machinery and equipment, transport equipment, professional and scientific and measuring and controlling equipment	8	30.8	3	12.5	18	12.7	15	9.9
Information technology industry	1	3.8	0	0	1	0.7	3	2
Other manufacturing industry	0	0	0	0	1	0.7	8	5.2
Total	26	100	24	100	142	100	152	100

Explanation: A – Number of establishments

Source: Istanbul Chamber of Industry 2010

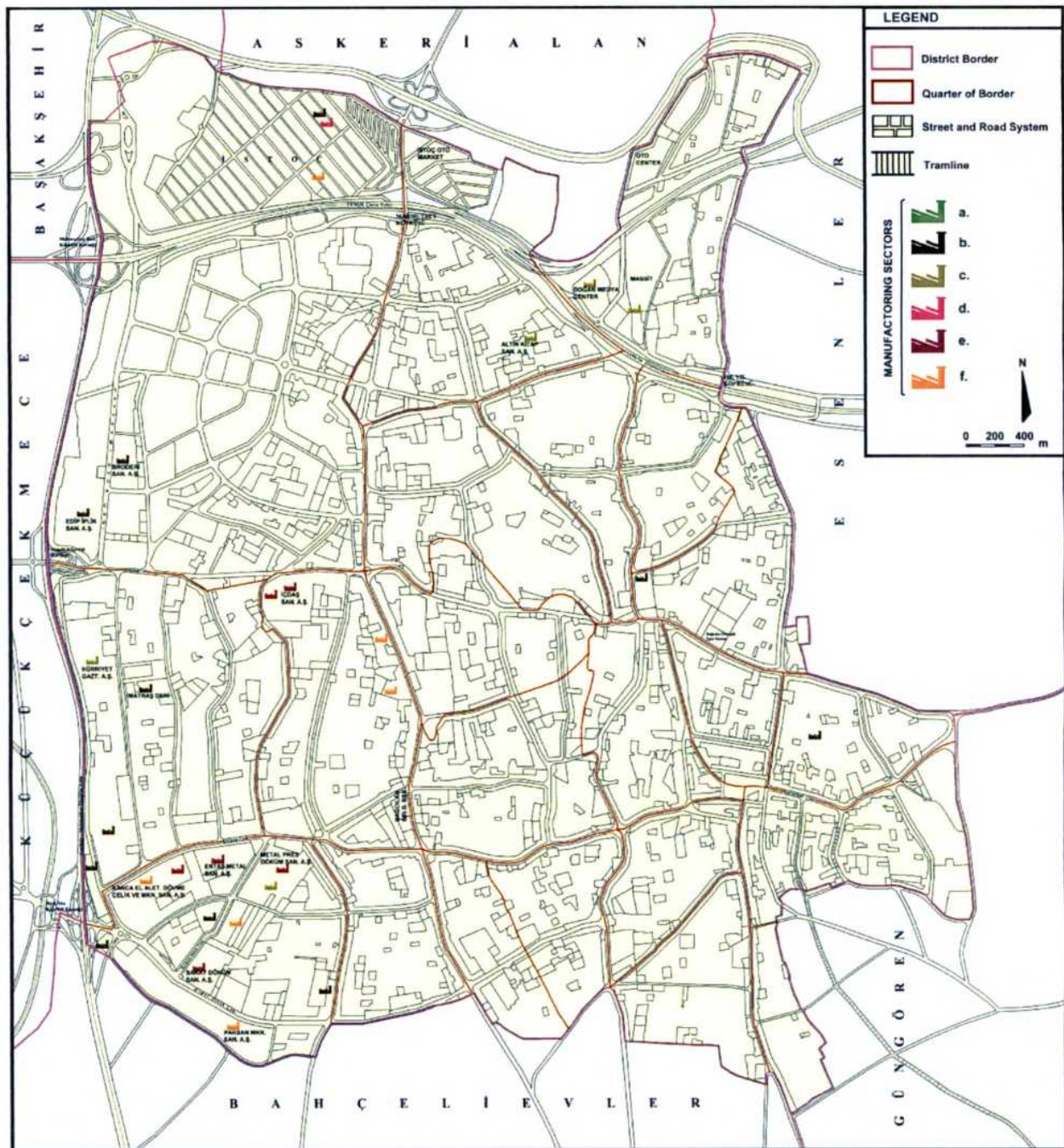


Fig. 2. The distribution of industrial establishments in Bağcılar District (before 1980, 25 employees and over)

Explanation: a. – manufacture of food, beverages and tobacco, b. – textile, wearing apparel and leather, c. – manufacture of paper and paper, printing and publishing, d. – manufacture of chemicals and chemicals of petroleum, coal, rubber and plastic products, e. – basic metal industries, f. – manufacture of fabricated metal products, machinery and equipment, transport equipment, professional and scientific and measuring and controlling equipment

Source: Elaborated by author based on Istanbul Chamber of Industry

3.2. Industry between 1980 and 2010

Industry has chosen Istanbul as the place of incorporation, following a tendency to create an external economy and take advantage of it for its important features like Turkey's largest and most important market, more easily accessible and cheaper raw materials and labour, technical infrastructure, accessibility and high level of social reinforcement. In the first half of the 1980s when Turkey's economy experienced conversion, 52.2% of the total medium and large scale industrial facilities and approximately 40% of the workforce which worked in the medium and large scale industrial establishments were in Istanbul.

Fifteen percent of industrial establishments which were established in the district were opened in the period 1980–1990. During this period, 82 medium and large establishments and addition 24 small businesses with a total of 106 facilities were established. When these industrial companies are examined by sector, with 61 establishments (48 large industrial) the textile, apparel and leather industry ranks first. Also with 13 major industries (11 major industries) paper and paper products and the printing industry, with 10 establishments chemical, petroleum, coal, rubber and plastic products industry is another big industry (Table 4 and 5).

Of the facilities established during 1980–1990, the first established industrial facilities were the following established in 1984, Anıl Bread and Baked Goods for the food, drink and tobacco industry, established in 1985 Murtaş Electronics Industry wood products and the furniture industry, and Alacalı Construction Industry which was established in 1987 for the stone and land-based industries. During this period, as in the period before 1980, Bağlar, Evren, Mahmutbey, Güneşli neighbourhoods are centres of concentrated industry thanks to the transport factor. Unlike the previous period of 1980–1990, 100th neighbourhood stand out as – a different neighbourhoods which are experienced in industry (especially as a regards paper and paper products and the printing industry) (Fig. 3).

In Bağcılar, the maximum number of industrial companies were in operation in the period 1990–2000. in comparison to the previous period, during this term there was an increase of 84% in the number of opened facilities. Undoubtedly, the new-

ly acquired status of municipality and district of Bağcılar plays a leading role. 41.3% of the establishments (293) which registered in Istanbul Chamber of Industry opened during this period. These establishments are 151 medium and large establishments and 142 small businesses. If these industrial companies are examined on a sectorial basis, textiles, wearing apparel and leather industries lead with 173 establishments (98 large industries). With 30 establishments (16 large industries) paper and paper products and the printing industry, with 28 establishments (10 large industries) the industry producing metal products, machinery equipment, transport devices, scientific and professional measuring instruments follows other sectors (Table 4 and 5). Again in this period, 4 establishments of information technology which did not exist in the previous period and 4 more establishments in other industrial companies were established for service. In information technology industries, Akenez Tourism-Transportation, established in 1991 and other manufacturing industries, like Favori Jewellery, established in 1992 were the first facilities in these sectors (Fig. 3).

In the research area, in the period 2000–2010, 256 facilities were established and 36% of these facilities started to operate in this period. 104 of these facilities are medium and large establishments and 152 of these facilities are small establishments. When industrial facilities are analyzed by sectors; it could be seen that, with 171 establishments (80 large industries), textiles, clothing and leather industries lead and this sector is followed by, with 21 establishments (9 large industries), paper and paper products and the printing industry, with 18 establishments metal goods, machinery equipment, transport devices, scientific and professional measuring instruments and the chemical industry, petroleum, coal, rubber and plastic industries (Table 4 and 5). The period 2000–2010 is remarkable as the period of the most industrial establishments after 1990–2000. In this period, economic crises (2001 and 2008 economic crises), industrial facilities and urban planning reasons such as the decentralization of facilities represented major reasons for the decline in the number of facilities opened during the previous period. Before 1980, in the period 2000–2010 as well as 1980–1990, 1990–2000 Bağlar, Evren, Mahmutbey,

Güneşli and 100th Year neighbourhoods were the centres of the industry (Fig. 3).

In Bağcılar, after 1980, a total of 77 establishments which have 100 employees and over in the food, drink and tobacco sectors were operating (in the textile, apparel and leather industry; 4, in wood

products and the furniture industry; 50, in paper and paper products and the printing industry; 5, in the stone and land-based industrial sector; 3, in the basic metal industry sector; 3, in metal products, machinery equipment, transport vehicles, etc. sector; 10, in other manufacturing industry; 1 plant).

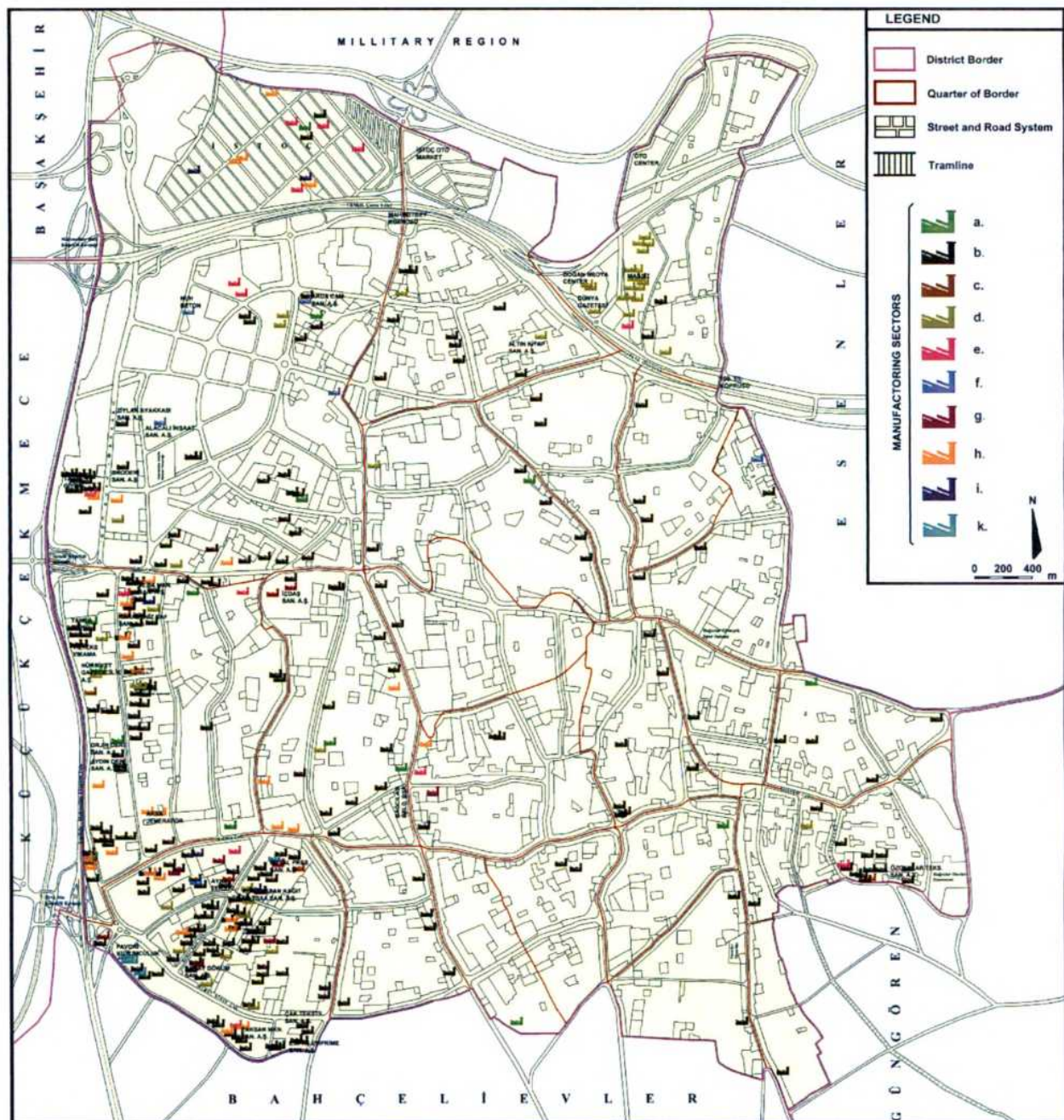


Fig. 3. The distribution of Industrial Establishments in Bağcılar (1980–2010, 25 employees and over)

Explanation: a. – manufacture of food, beverages and tobacco, b. – textile, wearing apparel and leather, c. – manufacture of wood and wood, products including furnish, d. – manufacture of paper and paper, printing and publishing, e. – manufacture of chemicals and chemicals of petroleum, coal, rubber and plastic products, f. – manufacture of non metallic mineral products except products of petroleum and coal, g. – basic metal industries, h. – manufacture of fabricated metal products, machinery and equipment, transport equipment, professional and scientific and measuring and controlling equipment, i. – information technology industry, k. – other manufacturing industry

Source: Elaborated by author based on Istanbul Chamber of Industry

Of industrial establishments established after 1980, Hey Textile opened in 1992 and engaged in the production of underwear with 1,039 employees, and Özcanlar Textile opened in 1982, which manufactures textile dyeing and discipline textiles with 950 employees are operating as two large facilities. In addition, Uçak Service in the production of ready meal service for air vehicles, Çak Textile, Gülom Textile and Taner Triko for apparel production, Ayka Textile for weaving and garment production, Zıylan Shoe for shoe production and Ser Durable Goods Industry for household and electrical appliances are other important establishments which have more than 300 employees.

4. Division of industry sectors in Bağcılar District

While 38,355 people are employed in the 710 facilities which are located in Bağcılar district, 4,960 people (13%) are employed in 344 industrial facilities which have 25 employees and under 33,395 (87%) people are employed in the facilities which have 25 employees and over (Table 6 and 7).

In the facilities located in Bağcılar, the textile, apparel and leather industry represent more than 50% of district establishments with 425 industry establishments and this sector is followed by metal products, machinery equipment, transport vehicles, scientific and professional measuring instruments establishments with 72 (10%) and paper and paper products and the printing industry with 71 (10%). At the same time these three sectors compose 80% of the facilities operating in the district. In the district, when the number of employees in industrial establishments is analyzed, it could be seen that textile, apparel and leather industry occupy first place with 23,675 employees (62%). This sector is followed by the industry producing metal goods, machinery equipment, transport vehicles, scientific and professional measuring instrument with 3,714 employees (10%), paper and paper products and the printing industry with 3,076 employees (8%) and

the basic metal industry with 2,919 (7%) (Table 6 and 7). According to this information, the textile, apparel and leather industry which is the leading sector of Istanbul and our country, appears to be the most important sector in Bağcılar.

By 2010, there were 344 small industry establishments which were registered by Istanbul Chamber of Bağcılar. In these establishments, the textile, apparel and leather industry is still first with 188 (55%) establishments, and this sector is followed by the chemical, petroleum, coal, rubber and plastic industry and producing metal products, machinery equipment, transport vehicles, scientific and professional measuring instruments with 43 establishments (12%) and with 30 (9%) establishments paper and paper products and the printing industry. Within sectors, the base metal industry and stone and land-based industries with 3 establishments are in the last place. A total of 4,960 people work in small industrial establishments in the district. According to the number of employees by sector, we have the following numbers of employees in the textile, apparel and leather industry 2,780 (56%) people, in the chemical, petroleum, coal, rubber and plastic products industries 620 people (13%), and in metal goods, machinery equipment, means of transport, scientific and professional measuring instruments 555 people (11%). Of sectors, the base metal industry is the last one with 40 (1%) employees (Table 6 and 7).

According to the horizontal distribution of the Industry in Bağcılar, industry is dense in Bağlar Neighbourhood at Osman Paşa Street, Mimar Sinan Street, Talçın Koreş Street, Koçman Street; in Evren Neighbourhood at Gülbahar Street, Bahar Street, Halkalı Street; in Mahmutbey Neighbourhood at Taş Ocağı Yolu Street, Halkalı Street, Devekaldırımı Street, Peyami Safa Street, Atlas Street, İstoç Business Center; in the 100th Year Neighbourhood at Hüseyin Karaarslan Street, Veysel Karani Street, Kışla Street; in Merkez Neighbourhood at Güngören Street and around. As stated on the Map of Urban Functions in Bağcılar District as well as formal areas, administrative facilities, the central commercial and business areas are concentrated on these streets.

Table 6. Sectors Division of Industrial Facilities in Bağcılar District

Manufacturing Sectors	25 employees and over		25 employees and under		Total	
	A	%	A	%	A	%
Manufacture of food, beverages and tobacco	16	4	13	4	29	4
Textile, wearing apparel and leather	237	65	188	55	425	60
Manufacture of wood and wood, products including furniture	5	1	7	2	12	2
Manufacture of paper and paper products, printing and publishing	41	11	30	9	71	10
Manufacture of chemicals and chemicals of petroleum, coal, rubber and plastic products	13	4	43	12	56	8
Manufacture of non metallic mineral products except products of petroleum and coal	6	2	3	1	9	1
Basic metal industries	8	2	3	1	11	2
Manufacture of fabricated metal products, machinery and equipment, transport equipment, professional and scientific and measuring and controlling equipment	29	8	43	12	72	10
Information industry	5	1	5	1	10	1
Other manufacturing industry	6	2	9	3	15	2
Total	366	100	344	100	710	100

Explanation: A – Number of establishments

Source: Istanbul Chamber of Industry 2010

Table 7. Bağcılar Sectors Division of Employees within Industrial Facilities

Manufacturing Sectors	25 employees and over		25 employees and under		Total	
	A	%	A	%	A	%
Manufacture of food, beverages and tobacco	1,710	5	205	4	1,915	5
Textile, wearing apparel and leather	20,895	63	2,780	56	23,675	62
Manufacture of wood and wood, products including furniture	283	1	70	1	353	1
Manufacture of paper and paper products, printing and publishing	2,607	8	469	9	3,076	8
Manufacture of chemicals and chemicals of petroleum, coal, rubber and plastic products	536	2	620	13	1,156	3
Manufacture of non metallic mineral products except products of petroleum and coal	655	2	43	1	698	2
Basic metal industries	2,879	8	40	1	2,919	7
Manufacture of fabricated metal products, machinery and equipment, transport equipment, professional and scientific and measuring and controlling equipment	3,159	10	555	11	3,714	10
Information industry	170	0	55	1	225	0
Other manufacturing industry	501	1	123	3	624	2
Total	4,205	100	4,960	100	38,355	100

Explanation: A – Number of employees

Source: Istanbul Chamber of Industry 2010

5. Environmental impact of industry in Bağcılar District

The average altitude of Bağcılar is nearly 50–70 metres and Bağcılar district was established on a straight and slightly undulating plateau which is affected substantially by abrasion. The lengths of rivers are small and its regimes are irregular. They have changed into streams which carry biological and chemical waste because of rapid urbanization and industrialization.

River beds are treated to try to reintroduce breeding with improvement of streams and a compulsory waste water treatment system. In the last 30 years, in Bağcılar district which has 72% arable land, today plant and animal production is not possible anymore because of the construction industry. In this context, today it is not possible to talk about agricultural pollution in the district. In Bağcılar, the main causes of pollution are municipal and industrial wastes (6). Bağcılar district has 170,000 residential inhabitants and workplaces. That is why the amount of garbage is 260,000 tons per year. There is no heavy industry (except 1 iron and steel factory), but the pollutants of establishments are solid fuels (which concerns 20% of the existing establishments, while others completed the transition to natural gas) and they are released into the air as waste (stack filters). Also they use poor quality and low-sulphur coals impacting negatively human health. In addition, textile dyeing and discipline facilities use heavy water and create residual a water as a result, but only 30% of these facilities which operate in this sector have water treatment plant. Day by day, the numbers of facilities which establish water treatment establishments are increasing by Istanbul Metropolitan Municipality Water and Sewage Works Management activities in the area.

The biggest negative effect of industrialization is direct pollution. In the countries which are continuing the process of industrialization such as Turkey, cheap fuel is used for cheap production, as the waste required by the production is given to buyer sources. As a result air, water and soil are polluted. As well as environmental pollution by domestic waste, industrial pollution is much more significant. Industrial establishments show a large distribution regarding the pollution they create in themselves. In

terms of water pollution, while in electronic assembly plants, any industrial waste does not mix with the sanitary sewage system, in textile dyes, discipline and washing facilities pollution is much larger in size.

6. Conclusions

The researched area which is located within the bounds of Istanbul Metropolitan Municipality, have had intensive urbanization in parallel with industrialization in the last 30 years. With 18% of the population of Turkey, in Istanbul, Bağcılar, with its 738,809 inhabitants is Istanbul's most populous and most densely populated district. In Bağcılar, 32% of the population constitutes the active population. More than 50% of the active population is employed in the manufacturing industry.

In Bağcılar district, raw materials sources of agriculture, and animal husbandry are extremely limited, even if there is no production in these fields. Industrial facilities which are operating in the district receive the necessary energy from the interconnected system. In addition, approximately 80% of industrial facilities in the district use natural gas as fuel. The district which is within Istanbul, and the most developed region of Turkey (Marmara Region) in terms of transportation is located between Turkey's most important highway M-80 (TEM)'s O-2 route and south-west and north-east of express links of the E-100 (the old E-5). In addition, it is also located on Mahmutbey highway, which is Istanbul's most important second main north-south transportation route. Almost all industrial facilities in Bağcılar show spatial distribution around the transport routes and especially road transport routes have had a significant effect on the place of incorporation of industry. In addition, in Bağcılar industrial facilities are privately owned and established by entrepreneurs' own capital. However, the main reason for the establishment of industrial facilities in Bağcılar is not represented by the proximity to sources of raw materials and energy but to be close to the market, sectoral specialization and transport possibilities.

In Bağcılar, industrialization began in the 1950s and continued to grow exponentially in the later

periods. Especially in the period 1990–2000, district industry was at its peak with the number of opened facilities. 34,452 people are employed in medium and large-scale industrial facilities (366 facilities) and in small industrial facilities (344 facilities) 4,960 people are employed. Despite the diverse range of industry sectors, in the district of Bağcılar, the leader sector is textiles, apparel and leather industries with 425 (60%) firms and 23,675 (62%) employees. Many companies which are operating in the district have been active both nationally and internationally. Bağcılar industry is concentrated around the main streets and business centres such as İçtoç, Bağlar, Mahmutbey, Evren, 100th year and Merkez neighbourhoods. Of these centres, especially Bağlar, Evren and Mahmutbey neighbourhoods are to be noted. According to data from the year 2010, Mahmutbey Neighbourhood with 5,315 people to sq km, Bağcılar Neighbourhood with 9,610 people to sq km, and Mahmutbey Neighbourhood with 24,321 people to sq km have the lowest population density. It is clear that the population has not moved to centres of intensive industry, but they have moved to neighbouring areas of industries.

A part of industry facilities of Bağcılar which were established in the past have remained in the middle of intensive settlement. These plants should be placed in better locations in the district. In the district there are very intensive crooked construction and irregular industrial facilities, which is why irregular and unplanned construction cannot be prevented. Some industrial facilities hold their production process in old and unhealthy buildings. It should be encouraged to transfer these plants to more modern and planned buildings construct business and industrial areas.

- (2) Istanbul was the capital of three empires, that is, Roma, Byzantium and Ottoman. It is one of few cities which has been an economic center in all eras. Istanbul's share of Turkey's Gross National Product is approximately 23%. While Istanbul's economic contribution to government budget is 40%, it takes only 7–8% from government budget. Istanbul has an important place in both import and export. Also, it is Turkey's most important export and import gate.
- (3) Zeytinburnu (11 km), Ambarlı (28 km), Haydarpaşa (30 km), Silivri (66 km), Tuzla (55 km).
- (4) www.usas.com.tr/tr/giris.asp, DoA: 10 February 2011.
- (5) In Turkey, the phrase “small industry” means not only small industry facilities but also small crafts and handicrafts. The report called “The Development and Manufacturing Industry in Egypt, Israel and Turkey,” published by the United Nations in 1958, defines medium and large scale businesses as those employing more than 10 employees. So industrial enterprises employing fewer than 10 have been received as small businesses. The definition of small industry adopted in Turkey is as follows: Businesses employing 25 employees the most, having machinery park worth up to 20 million liras and using production methods partly based on experiment (Buldam, 1981, p. 3–4).
- (6) When residues are given to nature without any process, they are named as wastes. Wastes originated from houses and/or work-places which don't contain harmful and dangerous materials are named as domestic wastes. Wastes of industry and production facilities that occur in or after a process are called industrial wastes.

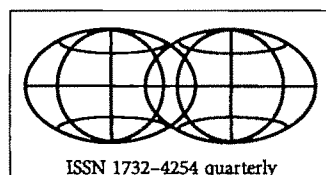
Notes

- (1) According to the book “Istanbul City Statistics Annual 1930–1931” published by Istanbul Metropolitan Municipality Statistics Office, the names of these villages are Avas, Ayapa, Ayayorgi, Çiftiturgaz, Vidos, İkitelli, Litros, Mahmutbey, Nifos, Şamlar and Yenibosna. Source: <http://www.Istanbul.net.tr/Istanbul-Rehberi/Dosyalar/bolumler/bagcilar/7/62>.

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Capital Region Demographics in the Republics of Russia

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Abstract. This article examines population fluctuations in the capitals of Russian Republics from 1970 to 2010. Factors contributing to population changes in each capital will be analyzed, with a special focus on natural growth rates and the role of ethnicity.

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1. Introduction

According to experts, demographic processes in Russia are an understudied and underreported phenomenon. This is largely explained by the delayed demographic transition in Russia compared to Western countries, and the controversial population policy agenda during the Soviet era (Szymańska, 2004). Conservative social development principles,

in which infrastructure took priority, created an environment where a 'low value was placed on human life' in Russia (Vishnevskiy, 2005). As a result, the Russian birth rate plummeted. However, this was not due to improvements in women's health care, as evidenced in the contraceptive revolution in the West. Rather, the allowance of abortions cut the birth rate severely, which also had a negative effect on women's health. Life expectancy rates dropped, which in turn dramatically raised death rates. Death

rates remained high in comparison with Western countries throughout the Soviet years.

The current situation has not changed noticeably. According to T. Golikova, the poor implementation of the strategies outlined in the government's Human Development Legislation, adopted until 2025, *"unfortunately, does not make it possible to achieve the (Legislation's) ambitious goals"*. According to their projections, the Russian population should see a natural growth of 35,000 people in 2013, and average life expectancy should rise to 71 years across the nation. In reality, we expect to see a much smaller growth in 2013 and, of course, significant differences between regions due to various factors – one of which, we will argue, is the ethnicity of the population.

This paper looks specifically at the capitals of the Republics of Russia. We intend to reveal the different situations that these capital cities find themselves in according to the demographics of their region.

Average demographic rates across Russia come across as comparatively favorable. It is clear, though, that in multi-national Russia ethnicity plays a role in the demographic differentiation of the country. Russia is composed of 21 national republics or national autonomous regions and six national autonomous districts, some of which have cities considered to be population centres. It should be noted that even among ethnic areas and their centres, there is a considerable spread in demographic rates.

2. Research Methods

Traditional methods for the study of demographic processes were used for this paper. The speed of growth among populations in the centres of national territories was analysed for the intercensal periods between 1970 and 2010. Next, we incorporated component graphs by city-type analysing the growth of the population for 1998 and 2003. We then presented dynamic changes in natural growth rates within cities, which we compared to the ethnic makeup of the population. As a part of the study, we utilized several key demographic indices, including natural population growth, migration rates, and ethnic diversification (Trifonova, 2006).

3. Results

Population growth in cities is determined by natural growth, migration and administrative reforms. Therefore, growth during times of stability and favourable conditions will be positive. Thus, in the Soviet period, during comparatively stable social-economic periods, all capitals in question experienced a rather high rate of growth (Table 1).

Table 1. The speed of population growth in the capitals of republics for the indicated periods of time (%)

The capital	A	B	C	D
Abakan	42.6	20	7.3	-0.9
Anadyr	58.4	40.2	-34.5	6.7
Birobidzhan	23.2	21.9	-5.1	-3.3
Cheboksary	42.3	36.6	4.9	2.9
Cherkessk	35.1	24.4	2.8	4.5
Dudinka	25.9	30.2	-22.2	-2.1
Elista	40.9	27.6	16.2	-1.1
Gorno-Altaysk	15.9	9.3	3.8	4.6
Grozny	9.9	6.5	-47.3	28.9
Khanty-Mansiysk	14.1	21.9	56.5	50.6
Izhevsk	29.9	15.7	-0.5	-0.6
Kazan	14.3	9.3	1.8	3.6
Kudymkar	7.6	17.9	0	3.9
Kyzyl	27.7	27.3	23.9	5.6
Magas	*	*	*	810.9
Makhachkala	35.2	25.3	46.9	24.9
Maykop	16.2	16.3	5.6	-1.4
Nalchik	0.2	42.1	32.6	-12.7
Naryan-Mar	38.5	-13.7	-8.4	6.5
Petrozavodsk	74.5	14.4	-1.3	1.8
Salekhard	13.7	29.7	6.8	28.1
Saransk	37.6	19.2	-2.4	-2.4
Syktyvkar	1	85.3	-0.7	2.5
Ufa	25.7	11.6	-3.7	1.9
Ulan-Ude	18.4	17.7	1.7	12.5
Vladikavkaz	18.1	7.6	5.2	-1.3
Yakutsk	41.5	22.5	12.9	27.2
Yoshkar-Ola	21.3	19.9	6.3	-3.1

Explanation: A – 1970–1979; B – 1979–1989; C – 1989–2002; D – 2002–2010; * n/a

Source: Results of the USSR-wide Census of 1970, 1972; Results of the Russian-wide Census of 1979, 1989; Regions of Russia. The Main Social-Economic Findings of the Cities, 2010

In Soviet times, each capital experienced population growth due to migration. Trained specialists were sent in mass throughout Russia, even to the most remote Republics. In the post-Soviet era, mass migration ground to a halt, which is reflected in a stunt in growth in Table 1. From 1989 to 2002, ten cities began to show a decrease in population. Grozny, the capital city of the Chechen Republic, experienced the most severe decline, due to the First and Second Chechen Wars in the 1990s. Sharp decreases were also noticed in three national district centres, Anadyr, Dudinka and Naryan-Mar, all of which are located in remote areas of Russia and do not specialise in hydrocarbon export, an area that would arouse interest from Moscow.

City populations continued to decline from 2002 to 2010. The cities of Izhevsk, Saransk, Birobidzan, and Dudinka experienced decreases in population, in both periods 1989–2002 and 2002–2010. There was a noticeable population decrease in the capitals of three republics of the Northern Caucasus, in the capital of Kalmykia, and in two capitals of republics in the Ural-Volga region. Population decline is rather difficult to change, as the effects from efforts of population reproduction are often delayed for several generations.

Some capitals experienced population growth from 2002 to 2010, namely, Makhachkala, Grozny, Khanty-Mansiysk, Salekhard, Yakutsk, and Ulan-Ude. Population growth in Makhachkala and Grozny was mostly due to urbanization as people migrated from the rural areas to the cities. Specialists have found that rural youth are now eager to leave mountainous areas, preferring to live in the capitals where there is a greater variety of work opportunities. This is possible due to the stabilisation of the political and military situation in the Northern Caucasus as well as the enormous financial assistance from the federal government on the reconstruction of capitals and other population centres in Chechnya.

In Figure 1, we compare features of population growth, natural vs. migration growth, between cities for the years 1998 and 2003. The statistics for the two capitals, Magas and Grozny were not available for this study, nor were the centres of national districts, so they have not been included in the following Figure.

As is apparent from Fig. 1 (part A), in 1998 there was a positive population growth in seven cities (Syktyvkar, Yakutsk, Kyzyl, Cheboksary, Elita, Cherkessk, and Gorno-Altaysk) thanks to both natural and migration growth. At the same time, five capitals experienced a decrease in population with a simultaneous decrease of both factors (Vladikavkaz, Nalchik, Izhevsk, Saransk, Yoshkar-Ola). Six cities had a slight migration growth that did not counter balance the significant natural decline in population. All of these cities can be found in the third and fourth quadrants of Figure 1 (part A). This reflects the reaction of the population to the socioeconomic instability in Russia during the second half of the 1990s. During these crisis years, the population was reluctant to migrate or have children. In comparison, we see that in 2002, migration played a major role in the mobility of the population. This is illustrated in Figure 1 (part B), where all the cities are now stretched along the Y axis, as opposed to 1998 when they stretch along the X axis. The demographic processes in the cities of Gorno-Altaysk and Makhachkala saw drastic changes in migration growth compared to other populations (Fig. 1 (part B)). In the 1990s a sizable portion of the Russian population was forced to leave Makhachkala mostly for reasons of personal safety. Migration of skilled workers stopped during this period and native urbanization rapidly grew through the 2000s. Because of this, the contrast between the urban and rural ways of life in Dagestan is very high (Trifonova, 2011). In contrast, migrants from Central Asia and Kazakhstan flooded into Gorno-Altaysk during the 1990s, but by 2002 this wave had already subsided. Not only did the capitals of Saransk, Ulan-Ude, Abakan, Izhevsk, Nalchik, and Ufa also experience migration decline, but populations in these cities decreased due to natural population decline as well.

The changes in natural population growth in the studied cities are shown in Fig. 2. For comparison with the Soviet period, values during the year 1985 were also included. In the crisis years of the 1990s a sharp reduction in natural growth of the population can be seen. In 1995, in 18 of the 28 studied cities (including Nazran) rates of natural population growth fell. However, in Makhachkala and Nazran the magnitude of natural growth stayed above 10%.

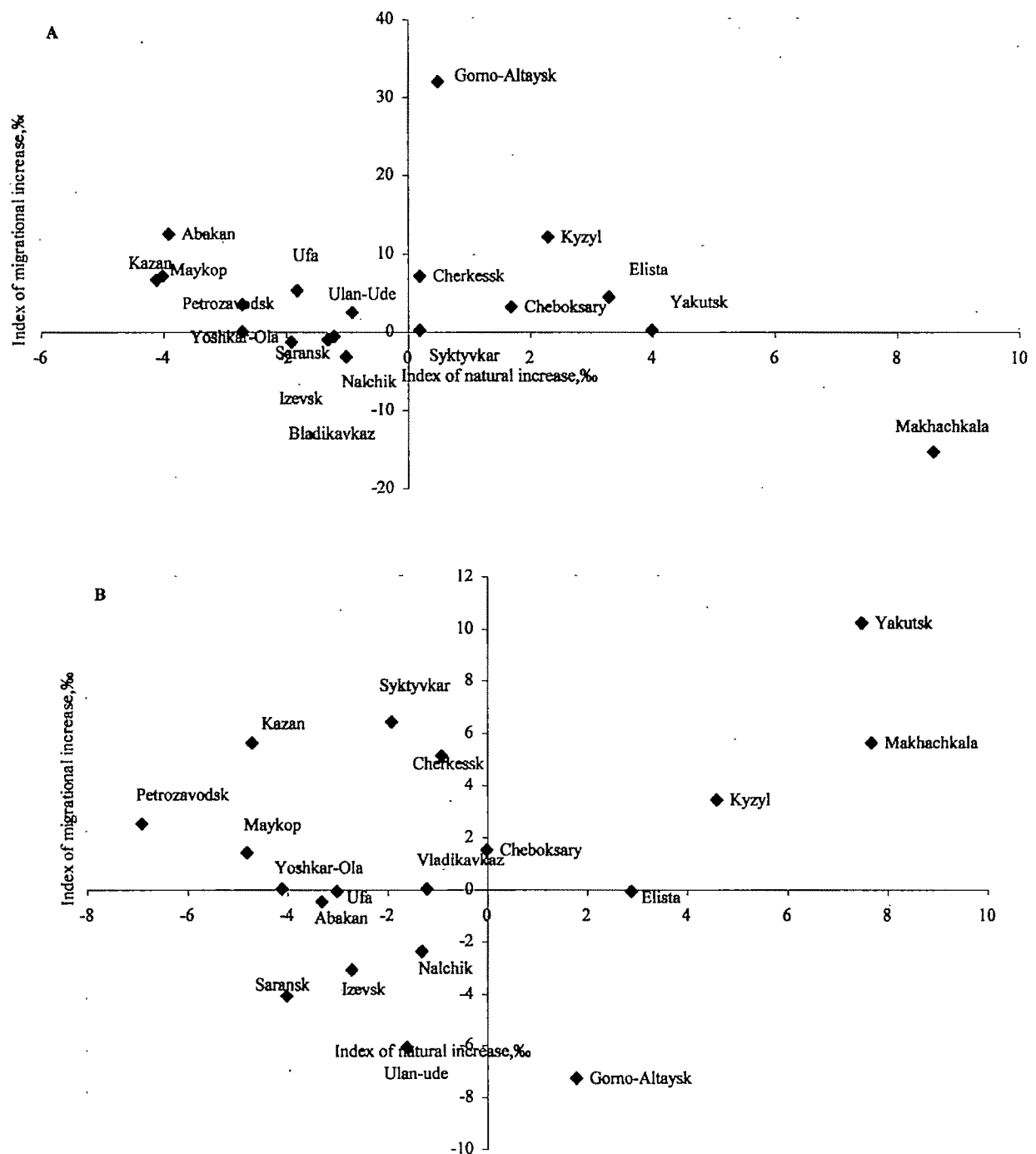


Fig. 1. Components of the growth of population of the capitals of national republics (A – 1998, B – 2002)

Source: Regions of Russia. The Predominant Characteristics of Subjects of the Russian Federation, 2003

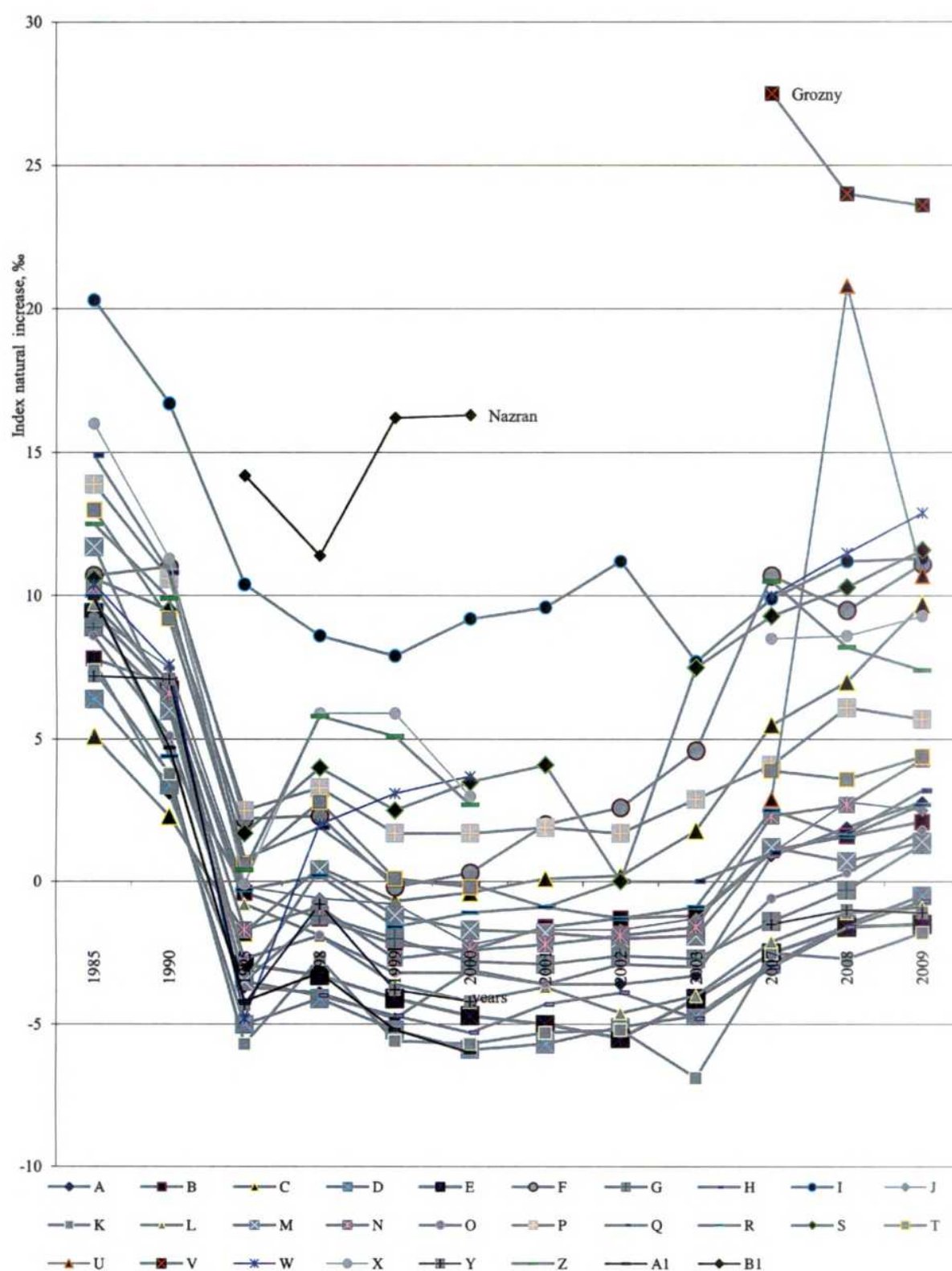


Fig. 2. Index of natural population growth

Explanation: A – Abakan; B – Vladikavkaz; C – Gorno-Altaysk; D – Kazan; E – Yoshkar-Ola; F – Kyzyl; G – Izhevsk; H – Maykop; I – Makhachkala; J – Nalchik; K – Petrozavodsk; L – Saransk; M – Syktyvkar; N – Ulan-Ude; O – Ufa; P – Elista; Q – Cheboksary; R – Cherkessk; S – Yakutsk; T – Naryan-Mar; U – Magas; V – Grozny; W – Khanty-Mansiysk; X – Salekhard; Y – Birobidzhan; Z – Anadyr; A1 – Kudymkar; B1 – Nazran

Source: Regions of Russia. The Main Social-Economic Findings of the Cities, 2010

Table 2: Index of natural population growth

	1985	1990	1995	1998	1999	2000	2001	2002	2003	2007	2008	2009
Abakan	7.7	3.1	-3.7	-3.9	-4.8	-3.1	-3.6	-3.6	-3.3	0.9	1.9	2.8
Anadyr	12.5	9.9	0.4	5.8	5.1	2.7				10.5	8.2	7.4
Birobidzhan	7.2	7.1	-4.3	-0.8	-3.8	-4.2				-1.5	-1	-1.1
Cheboksary	14.9	10.8	0.8	1.9	0.0	-0.1	-0.9	0.0	0.0	1.0	1.7	3.2
Cherkessk	10	4.4	-0.3	0.2	-1.6	-1.1	-0.9	-1.3	-0.9	2.5	1.6	2.7
Elista	13.9	10.6	2.5	3.3	1.7	1.7	1.9	1.7	2.9	4.1	6.1	5.7
Gorno-Altaysk	5.1	2.3	-1.8	0.5	-0.7	-0.4	0.1	0.2	1.8	5.5	7	9.7
Grozny										27.5	24	23.6
Khanty-Mansyisk	10.4	7.6	-4.8	2.0	3.1	3.7				10	11.5	12.9
Izhevsk	8.9	6.3	-3.5	-1.2	-2.0	-2.8	-2.9	-2.6	-2.7	-1.4	-0.3	1.3
Kazan	6.4	3.4	-5.0	-4.1	-5.2	-5.9	-5.7	-5.1	-4.7	-2.9	-1.5	-0.5
Kudymkar	9.9	4.7	-4.2	-3.2	-5.2	-6.0						
Kyzyl	10.7	11.0	2.2	2.3	-0.2	0.3	2.0	2.6	4.6	10.7	9.5	11.1
Magas										2.9	20.8	10.7
Makhachkala	20.3	16.7	10.4	8.6	7.9	9.2	9.6	11.2	7.7	9.9	11.2	11.3
Maykop			-3.5	-4.0	-4.7	-5.3	-4.3	-3.9	-4.8	-3.0	-1.6	-0.7
Nalchik	9.3	7.5	-0.2	-0.6	-0.8	-2.2	-1.7	-1.7	-1.3	1.0	2.8	2.5
Naryan-Mar	13.0	9.2	0.6	2.8	0.1	-0.2				3.9	3.6	4.4
Nazran			14.2	11.4	16.2	16.3						
Petrozavodsk	7.4	3.8	-5.7	-2.7	-5.6	-5.7	-5.3	-5.2	-6.9	-2.5	-2.7	-1.8
Salekhard	16	11.3	-0.1	5.9	5.9	3.0				8.5	8.6	9.3
Saransk	9.7	7.0	-0.8	-1.9	-3.6	-4.2	-3.7	-4.6	-4.0	-2.1	-1.1	-0.9
Syktvykar	11.7	6.0	-3.5	0.4	-1.2	-1.7	-1.8	-2.0	-1.9	1.2	0.7	1.4
Ufa	8.6	5.1	-2.7	-1.9	-3.2	-3.2	-3.6	-2.9	-3.0	-0.6	0.3	1.8
Ulan-Ude	10.3	6.6	-1.7	-0.9	-2.7	-2.4	-2.2	-1.9	-1.6	2.3	2.7	4.3
Vladikavkaz	7.8	6.9	-0.4	-1.3	-2.2	-2.4	-1.6	-1.3	-1.2	1.1	1.6	2.1
Yakutsk	10.6	9.5	1.7	4.0	2.5	3.5	4.1	0.0	7.5	9.3	10.3	11.6
Yoshkar-Ola	9.4	6.7	-2.9	-3.3	-4.1	-4.7	-5.0	-5.5	-4.1	-2.5	-1.6	-1.5

Source: Regions of Russia. The Main Social-Economic Findings of the Cities, 2010

There were six cities (Type 1) that experienced stable positive natural population growth: Makhachkala, Elista, Yakutsk, Kyzyl, Cheboksary, Nazran (Fig. 2). For the entire examined period, the magnitude of natural growth remained positive in the capitals of Makhachkala, Elista and Yakutsk. An insignificant early decline of natural population rates was noted in Kyzyl, Cheboksary. This was followed by a sharp population rate increase, which allows us to include them in this group. These cities are also categorized by their relatively high prevalence of native peoples. While all the studied cities differ in the balance of native and Russian peoples, it is only in Yakutsk where there is a Russian majority (Table 2). Not only was the predominantly-native

makeup of the populations maintained throughout this period, but we also argue that it was precisely this ethnic component that ensured positive natural population growth. Russians, in comparison with other peoples of Russia, long ago completed the transition to smaller families. In contrast, Turk-Islamists and Buddhist peoples have maintained their traditional poly-nuclear families with many children.

Additional three cities also experienced positive population growth, but for different reasons (Type 2). Khanty-Mansyisk, Salekhard and Anadyr are all centres of autonomous districts, in which Russians dominate the ethnic structure. Khanty-Mansyisk and Salekhard are centres of prosperous

export-oriented hydrocarbon districts. Social conditions in these cities are quite favourable which is reflected in positive population growth, both natural and due to migration. The city of Anadyr falls into

this category due to the “phenomenon of Abromovich”. Abromovich generously supported this region to such an extent that similar positive population growth resulted from the favorable social conditions.

Table 3. Distribution of capitals of national territories by degree of ethnic mosaic (P_j)*

1 group				2 group				3 group	
P _j less 0.4				P _j from 0.4 to 0.65				P _j more 0.65	
predominance of titular peoples		predominance of Russian peoples		predominance of titular peoples		predominance of Russian peoples		3 and more nationality	
Capital	P _j	Capital	P _j	Capital	P _j	Capital	P _j	Capital	P _j
Grozny	0.07	Anadyr	0.28	Cheboksary	0.51	Gorno-Altaysk	0.43	Nalchik	0.70
Magas	0.39	Birobidzhan	0.22	Vladikavkaz	0.57	Maykop	0.44	Makhachkala	0.85
		Petrozavodsk	0.33	Kyzyl	0.53	Ulan-Ude	0.47	Cherkessk	0.65
		Hanty-Mansiysk	0.33	Elista	0.60	Izevsk	0.47		
		Salekhard	0.34	Kudymkar	0.49	Yoshkar-Ola	0.50		
		Abakan	0.33			Syktyvkar	0.61		
						Ufa	0.64		
						Yakutsk	0.60		
						Saransk	0.45		
						Kazan	0.52		
						Naryan-Mar	0.47		

Explanation: * Calculated by National composition and use of language, citizenship, 2004

$$P_j = 1 - \sum_{i=1}^m (a_i)^2,$$

where P_j – index of ethnic mosaic; m – quantity of nationalities in cities of settled regions; a_i – share of nationalities in all of the population with the city of the population of the region

Source: Calculated by National composition and use of language, citizenship, 2004

As can be seen in Figure 2, all studied cities experienced a positive change in the rate of natural population growth in the second half of the 2000s. By 2009, however, the six cities of Birobidzhan, Petrozavodsk, Maykop, Kazan, Saransk, Yoshkar-Ola still maintained a natural decrease in population (Type 3). These cities are predominantly mono-ethnic and have a Russian majority, which, we believe, explains the delay in natural population growth.

Ethnicity has been shown to be one of the major factors that determines the flow and counterflow of migration in cities with positive population growth (Streletskiy, 2011). While ethnic diversity certainly played a positive role in population growth during the Soviet period, there was also a high influx of highly skilled professionals into these regions from Moscow and St. Petersburg. During this time, non-

native migrants into the republics balanced with the urbanization of native peoples. In the post Soviet-era, however, migration of native peoples from the rural areas to the cities has only risen, and external migration into the capitals has dwindled down to isolated cases of Russian representatives in factories and institutions. This has resulted in a larger percentage of native peoples in the capitals of national republics.

4. Conclusions

The role of ethnicity in demographic processes is evident in the capitals of Russia's national republics. These capitals can be separated into three distinct types. Type 1 capitals are those with a high urban

concentration of native peoples and high rates of natural population growth. This type especially concerns representatives of Turkish and Bulgar cultures. Type 2 capitals are exceptions to this rule and they are those cities that experienced natural population growth due to exceptional resources and social support in the northern districts of the country. The third type of capitals concerns those with a Russian/non-native majority and thus a corresponding natural population decline.

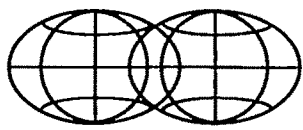
Migration processes between the latter two censuses in particular have strengthened the native ethnic makeup of the studied cities. The rapid increase of urbanization of native peoples, coupled with a drastic decline of Russian-migration in the republics, has changed the ethnic makeup of the capitals of Russia's republics.

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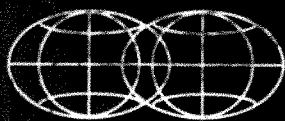
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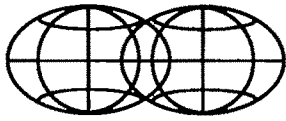
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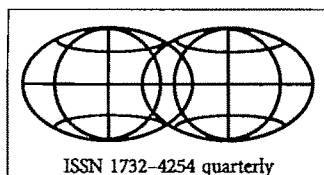
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Intra-annual climate variability and malaria transmission in Nigeria

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Abstract. This study develops an integrated innovation for malaria early warning systems (MEWS), based on vulnerability monitoring, seasonal climate variability data, and epidemiologic surveillance. The main aim of the study is to examine the relationship between intra-annual climate variability and malaria transmission in Nigeria. For this study, climatic conditions considered suitable for the development of the malaria parasite and its transmission through the mosquito stage of its life cycle are temperatures within the range from 18°C to 32°C. Below 18°C the parasite development decreases significantly, while above 32°C the survival of the mosquito is compromised. Relative humidity greater than 60% is also considered a requirement for the mosquito to survive long enough for the parasite to develop sufficiently to be transmitted to its human host stage. The research findings show that seasonality of climate greatly influences the seasonality of malaria transmission. Specifically, rainfall plays an important role in the distribution and maintenance of breeding sites for the mosquito vector. Rainfall and surface water is required for the egg laying and larval stages of the mosquito life cycle and monthly rainfall above 80 mm is considered a requirement. Also, it is temperature that regulates the development rate of both the mosquito larvae and the malaria parasite (*Plasmodium* species) within the mosquito host. Relative humidity and temperature play an important role in the survival and longevity of the mosquito vector. This study is in conformity with the findings of the IPCC (2001) that malaria is caused by four distinct species of the *Plasmodium* parasite, transmitted by mosquitoes of the genus *Anopheles*, which are most abundant in tropical/subtropical regions, although they are also found in limited numbers in temperate climates.

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1. Introduction

Malaria is one of the most common and overwhelming public health concerns in Nigeria. The impact of climate change and variability on human health has received increasing recognition since it was first mentioned in the First Assessment Report by the IPCC (Intergovernmental Report on Climate Change). Health and climate have been linked since antiquity and this is one of the reasons why the Second Assessment Report of the IPCC dedicated a chapter to health (McMicheal et al., 2003). Climate variability is widely considered to be a major driver of inter-annual variability of malaria incidence in Africa (Afrane et al., 2005). Several researches have suggested that climate can affect infectious disease patterns because disease agents (viruses, bacteria and other parasites) and their vectors (such as insects or rodents) are clearly sensitive to temperature, moisture and other ambient environmental conditions (Appawu et al., 2004; Ameneshewa et al., 1995). The best evidence for this sensitivity is the characteristic geographic distribution and seasonal variation of many infectious diseases. It has been observed that vector species behaviour, density, and the number of infective bites a person can receive per time unit are dependent on seasonal changes in climatic variables. Malaria is caused by four distinct species of the *Plasmodium* parasite, transmitted by mosquitoes of the genus *Anopheles*, which are most abundant in tropical and subtropical regions, although they are also found in limited numbers in temperate climates (WHO, 2001, 2002; Thomson, Connor, 2001; Toulmin, 2005). Transmission is associated with the changes in temperature, rainfall, humidity as well as the level of immunity in humans.

The IPCC Special Report on Regional Impacts of Climate Change (IPCC, 2001) acknowledges that climate has an impact on vector-borne diseases. Climate change affects potential geographical distribution and transmission of vector-borne infectious diseases such as malaria. There are many substantial research challenges associated with studying linkages among climate, ecosystems and infectious diseases. For instance, climate-related impacts must be understood in the context of numerous other forces that drive infectious disease dynamics, such as rapid evolution of drug- and pesticide-resistant pathogens, swift global dissemination of microbes and vectors through expanding transportation networks, and deterioration of public health programs in some regions (Appawu et al., 2004). In Nigeria malaria is the cause of one in four deaths recorded in infants and young children and, worse still, for every 10 women that die around childbirth, one is caused by malaria. About half of Nigerian adults have at least one episode of malaria each year, while in younger children malaria occurs up to 3–4 times a year. Malaria is also the reason for hospital attendance in 7 out of every 10 patients seen in Nigerian hospitals (Wagbatsoma, Ogbeide, 1995). Detailed studies of the interaction of rainfall and malaria in the general community in Africa are limited. There are many reasons for this deficiency. These include the general weakness of the health information systems in most African countries, the lack of diagnostic facilities resulting in a paucity of extended times series of confirmed case data, and difficulties in accessing appropriate rainfall data for the specific locations and time periods for which case data are available. Furthermore, in recent years studies on the interaction between climate and malaria have focused on the potential role of climate change in determining

recent increases in malaria transmission in high-land areas in Africa where temperature rather than rainfall has been the parameter of greatest interest. These studies have served to highlight the significant methodological difficulties in undertaking such analyses (WHO, 2003, 2004, 2005).

Therefore, this study aims to examine the relationship between the intra-annual climate variability and malaria transmission in Nigeria. The relationships of variability in rainfall, relative humidity and temperatures to malaria transmission are assessed at the national level. Knowledge of the magnitude of these spatial variations is critical to understanding the transmission dynamics of the disease and the evaluation of the efficacy of malaria control measures.

2. Study area

Nigeria is a tropical country which lies on the southern coast of West Africa between latitudes 4° and 14°N and longitudes 2°45' and 15°30'E (Fig. 1). The Republic of Niger borders it to the north, the Republic of Chad and Cameroon to the east, the Republic of Benin to the west and the Atlantic Ocean to the south. It has a total landmass of about 924,000 sq. km with a coastline of about 853 km. The country's vegetation changes from the Sahel savannah in the far north, followed by the Sudan savannah merging into the Guinea savannah in the middle belt, then tropical rainforest in the south and mangrove forest in the coastal areas. The geographical location, size and shape of Nigeria allows it to experience an array of ecological zones, ranging from the mangrove swamps and tropical rainforest belts in the coastal areas to the open woodland and savannah on the low plateau which extends through much of the central part of the country, to the semi-arid plains in the north and the highlands to the east. Between the arid north and the moist south lies the Guinea savannah zone, sometimes referred to as the middle belt. This type of the environment is determined mainly by climate. Two climatic regimes associated with the Intertropical Discontinuity (ITD) are experienced in Nigeria: the wet and the dry seasons. These two seasons are highly influenced by the two prevailing air masses moving

over the country at different times of the year. These are the warm and moist tropical maritime air mass (south Westerlies) that originates above the Atlantic Ocean and brings rainfall, while the other one is the cool dry and dust-laden continental air mass (Harmattan winds) that originates above the Sahara Desert.

The mean annual rainfall in the south-east of the country varies between 2,540 and 4,060 mm, while in the north – 500–1,500 mm. The annual rainfall in Nigeria is the highest in the coastal areas and decreases inland towards the north. The mean temperature ranges between 25°C and 30°C towards the interior as a result of the moderating influence of the sea. In the dry season, temperature reflects more extreme conditions ranging between 20°C and 30°C. Much of the southern half of the country is characterised by a long growing period of 200–365 days with a bimodal rainy season and the annual rainfall of 1,500–3,000 mm. The onset of the wet season in this region is as early as February or March. The rain continues to the end of November (Walter, 1968; Ayoade, 1970). However, the northern half has a much shorter unimodal rainy season of about 90–200 days with the annual rainfall levels of 400–1,300 mm. The onset of the wet season may be as late as June, while its cessation may be as early as September.

In 1991 the population of Nigeria was 88,992,220 based on the National Population Census, but by 2001 it increased to 126,635,626 with the growth rate of 2.61% and the density of 95.8 people per square kilometre according to the estimate of the National Population Commission (NPC). Based on the last national census of 2006, presently the NPC puts the population at 133 million. However, it is expected the population will have risen to about 255.6 million by the year 2025 at the growth rate of 2.8%. Nigeria is made up of six geopolitical zones and 36 states (Fig. 1) including the Federal Capital Territory (NPC, 2006).

Malaria still constitutes a serious public health problem in Nigeria. It is responsible for 60% outpatient visits to health facilities, 30% of childhood deaths, 25% of death in children under one year and 11% of maternal deaths (4,500 die yearly). In Nigeria, a child will be sick with malaria between 2 and 4 times a year and 70% of pregnant women suffer from malaria contributing to maternal anaemia.

mia, low birth weight, still birth, abortion and other pregnancy-related complications. The annual financial loss due to malaria is estimated to be approximately 132 billion NGN (Naira; 1 NGN is 0.01

USD) in form of treatment costs, prevention and loss of man-hours among others. Yet, it is a treatable and completely evitable disease (Wagbatsoma, Ogbeide, 1995).

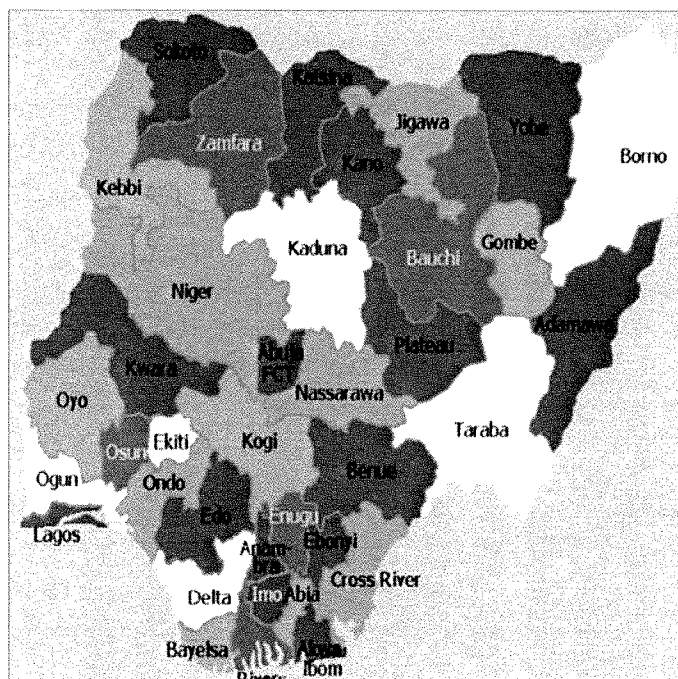


Fig. 1. Study area: Nigeria and its administrative division (incl. Abuja FCT, i.e. the Federal Capital Territory)

Source: <http://www.nigeriahc.org.uk/about-nigeria>

3. Materials and methods

3.1. Data acquisition and geospatial analysis

Climate suitability for malaria transmission was defined as the coincidence of the monthly rainfall greater than 80 mm, mean temperature between 18°C and 32°C, and relative humidity greater than 60%. These are the thresholds that are intended to describe conditions suitable for both the development of the *Plasmodium falciparum* parasite and the life cycle of the mosquito vector. Therefore, both climate and malaria data were used in this study. The climate parameters include monthly rainfall, relative humidity and temperature. The monthly precipitation, monthly temperature and monthly specific humidity data (converted to relative humidity) over land areas were extracted from the Climate Research Unit (CRU, Norwich, UK) Time Series (CRU TS). The monthly data on clinical

malaria cases from health facilities in 774 local government areas of Nigeria were used in a novel stratification process. The malaria cases were summed over two age groups (under and over 5 years). The malaria incidence per 1,000 persons per month was estimated using the 2006 population by the NPC.

3.2. Statistical analysis

The methods of Principal Component Analysis (PCA) and Non-hierarchical Clustering were used to define eight areas with distinct malaria intensity and climate seasonality suitability patterns, to guide future interventions and development of an epidemic early warning system. The PCA is a technique for simplifying a data set by reducing multidimensional data sets to lower dimensions in the data. The reduction in the dimensions of the data sets is necessary to run and accelerate the clustering analysis, which is a classification of objects into differ-

ent groups such that each group shares a common trait. A total of eight principal components were generated from the monthly average incidence data. The data were initially clustered into eight clusters for analysis. The clusters were visualised in the maps using the Geographic Information System (GIS) techniques. The GIS raster techniques were used to convert the climate data to climate suitability maps. The maps depict fractions between 1 and 12 which represent months suitable for malaria transmission. For this study, the climatic conditions considered suitable for the malaria parasite development and transmission through the mosquito stage of its life cycle are temperatures within the range of 18°C to 32°C. Below 18°C the parasite development decreases significantly, while above 32°C the survival of the mosquito is compromised. Relative humidity greater than 60% is also considered a requirement for the mosquito to survive long enough for the parasite to develop sufficiently to be transmitted to its human host stage. Rainfall and surface water is required for the egg laying and larval stages of the mosquito life cycle and the monthly rainfall above 80 mm is considered a requirement. To improve epidemic control based on the climate sensitive for the country, this study has developed a framework for the development of the integrated malaria early warning systems (MEWS), based on vulnerability monitoring, seasonal climate variability data, and epidemiologic surveillance. This study used a framework de-

veloped by the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA. The IRI framework and climate tools were explored in the development of the malaria early warning system in Nigeria.

4. Results and discussion

4.1. Climatic suitability for malaria transmission

The country is divided into eight zones which represent the climatic suitability for malaria transmission based on the rainfall, temperature and humidity, which are the most significant parameters (Table 1 and Fig. 2). Figure 2 shows the regional differences in how long the combination of climatic conditions may be suitable for malaria transmission in Nigeria. The map displays the number of months during the year that are suitable for malaria transmission, based on monthly climatological averages. The map was derived from the climate-driven malaria transmission models used to indicate monthly climate suitability for malaria and thereby indicates areas vulnerable to climate related malaria epidemics. Figure 2 clarifies the seasonal pattern and intensity of malaria transmission in different areas within the country.

Table 1. Number of months suitable for malaria transmission in Nige

Zone	Numbers of months suitable for malaria transmission	Months suitable for malaria transmission	Names of states within the zone
A	8½ months	March, April, May, June, July, August, September, October, November	Bayelsa, Rivers, Akwa-Ibom and the southern part of the Cross Rivers state
B	7½ months	April, May, June, July, August, September, October	Osun, Edo, Delta, Imo, Abia, Anambra and the southern part of Ondo and Ogun
C	6½ months	May, June, July, August, September, October	Oyo, Ogun, Kogi, Benue, Nasarawa, the southern part of Taraba, Abuja and Kwara
D	5 months	May, June, July, August, September	Niger, Plateau, Kwara, Taraba and the northern part of Abuja
E	4½ months	June, July, August, September	Kebbi, Kaduna, Bauchi and Gombe
F	4 months	June, July, August, September	Adamawa and the southern part of Borno
G	3 months	July, August, September	Sokoto, Zamfara, Katsina, Kano and Jigawa
H	1½ months	August, September	Yobe and Borno

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

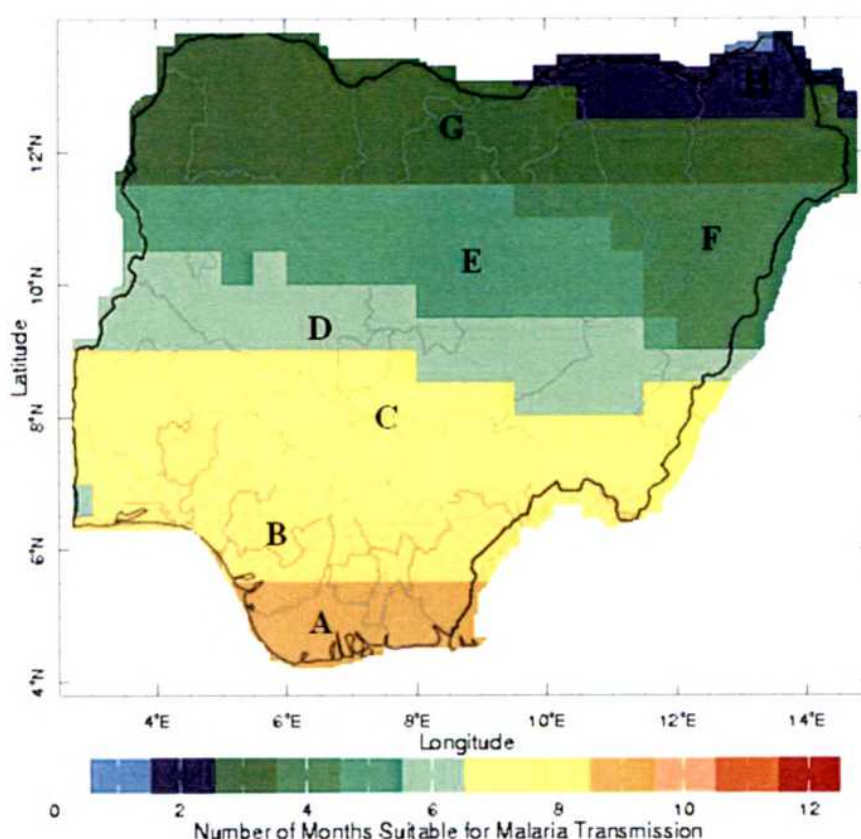


Fig. 2. Number of months suitable for malaria transmission in Nigeria

Explanation: zone A: the states of Bayelsa, Rivers, Akwa-Ibom, and the southern part of Cross Rivers; zone B: the states of Osun, Edo, Delta, Imo, Abia, Anambra and the southern part of Ondo and Ogun; zone C: the states of Oyo, Ogun, Kogi, Benue, Nasarawa, the southern part of Taraba, Abuja and Kwara; zone D: the states of Niger, Plateau, Kwara, Taraba and the northern part of Abuja; zone E: the states of Kebbi, Kaduna, Bauchi and Gombe; zone F: the states of Adamawa and the southern part of Borno; zone G: the states of Sokoto, Zamfara, Katsina, Kano and Jigawa; zone H: the states of Yobe and Borno

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

Table 1 and Figures 3–10 show the number of months suitable for malaria transmission in Nigeria calculated on the basis of the percentage of monthly rainfall, temperature, humidity and malaria occurrence. The figures show how often all these circumstances were concurrently observed at the measurement point for each month of the year, based on a historical record. The analyses and the figures show the proportional occurrence of the climatic conditions for each month. Generally, the rainfall averages over 2,000 mm per annum in the south-east, 1,000 mm in the centre reducing to as low as 500 mm in the north-east of the country.

Thus, it is observed from the figures that the seasonality of climate greatly influences the seasonality of malaria transmission. Specifically, rainfall plays an important role in the distribution and maintenance of breeding sites for the mosquito vector (*Anopheline* species). Moreover, temperature regulates the development rate of both the mosquito larvae and the malaria parasite (*Plasmodium* species) within the mosquito host. Relative humidity and temperature play an important role in the survival and longevity of the mosquito vector. For example, the coastal part of Nigeria (zone A) receives substantial amounts of rainfall in the months of

April through to October (9 months) and the greatest rainfall concentration occurs in the months of July to September (Table 1 and Fig. 3). Nine months (between May and November) were found suitable for malaria transmission in the coastal part of the county. The observations (Fig. 2) also show that three states fall within the zone A (Bayelsa, Rivers,

Akwa-Ibom and the southern part of the Cross Rivers state). Within the nine months, in this zone the total monthly precipitation is greater than 80 mm, the mean temperature is between 18°C and 32°C, and the relative humidity is greater than 60% from April to October which makes these months suitable for malaria transmission.

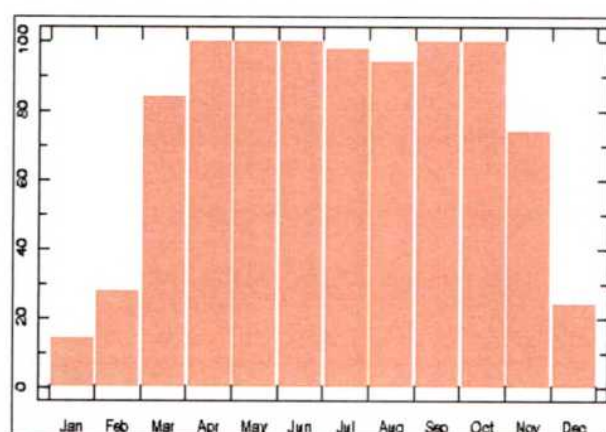


Fig. 3. Monthly climate conditions suitable for malaria transmission in the zone A (the states of Bayelsa, Rivers, Akwa-Ibom and the southern part of Cross Rivers)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

In the zone A (Bayelsa, Rivers, Akwa-Ibom and the southern part of the Cross Rivers state) the rainfall pattern is bimodal, the first peak occurring in June–July, and the second in September, with August relatively dry. Variations in annual rainfall make it difficult to draw a strict geographical boundary between these two distribution patterns in relation to malaria transmission. In reality, the zone A is within the coastal area and usually receives more rainfall than the inland locations. It ranges from 1,487.9 to 2,865.2 mm annually. Malaria transmission, based on climatic parameters, occurred between April and October in the zone B (Osun, Edo, Delta, Imo, Abia, Anambra and the southern part of Ondo and Ogun). In zone C (Oyo, Ogun, Kogi, Benue, Nasarawa, the southern part of Taraba, Abuja and Kwara) about six and half months of rainy season between May and October are responsible for malaria transmis-

sion (see Fig. 4 and 5). Variability in rainfall totals for the period between May and September accounts for more than two-thirds of the inter-annual variability in malaria transmission in the zone D (Niger, Plateau, Kwara, Taraba and the northern part of Abuja). The results show that 6½ and 5½ months are suitable for malaria transmissions in the zones C and D respectively (Fig. 5 and 6). The zone B is in the southern part of the country and has April as the onset month, while October is the cessation month. These zones are characterised by two peaks of rainfall in June/July and September while the northern stations have only one peak per year. Rainfall starts earlier in the southern stations (April/May) and ceases last in this region in October (Table 1). The period when rainfall ceases within the wet season exists in the south, and is referred to as the 'August break' or the 'little dry season' (Odekunle, 2004).

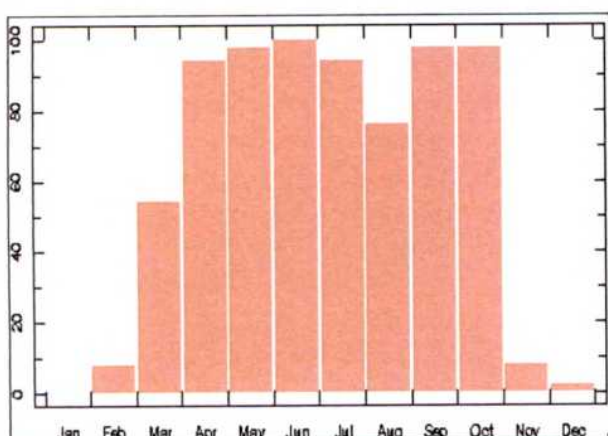


Fig. 4. Monthly climate conditions suitable for malaria transmission in the zone B (the states of Osun, Edo, Delta, Imo, Abia, Anambra and the southern part of Ondo and Ogun)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

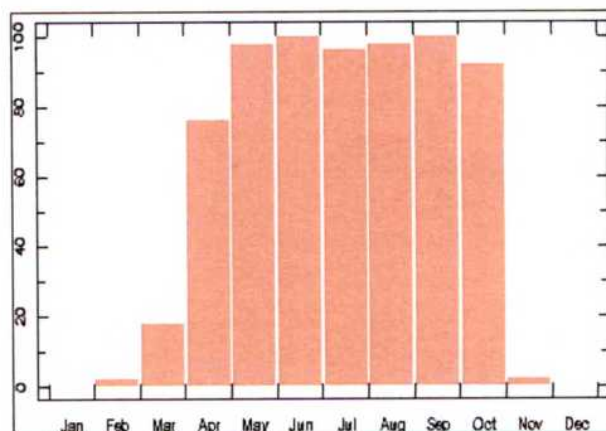


Fig. 5. Monthly climate conditions suitable for malaria transmission in the zone C (the states of Oyo, Ogun, Kogi, Benue, Nasarawa, the southern part of Taraba, Abuja and Kwara)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

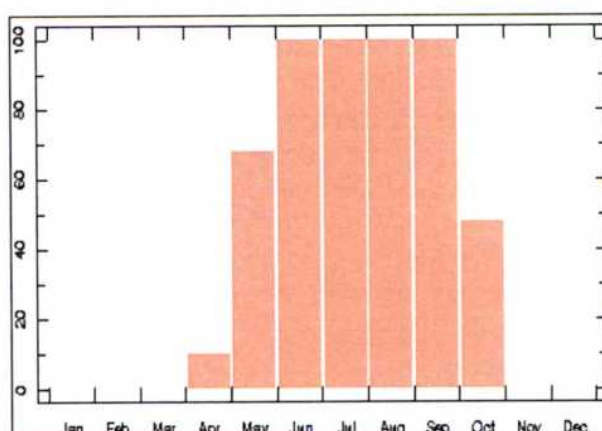


Fig. 6. Monthly climate conditions suitable for malaria transmission in the zone D (the states of Niger, Plateau, Kwara, Taraba and the northern part of Abuja)

Source: Authors' computation from data obtained from International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

The zones E (Kebbi, Kaduna, Bauchi and Gombe) and F (Adamawa and the southern part of Borno) receive substantial amounts of rainfall in the months of July through to September (see Fig. 7 and 8). This actually indicates that only four months are suitable for malaria transmission in these zones. Three months of rainfall and temperature anomalies are observed to be a major driver of inter-annual

variability of malaria transmission in the zone G (Sokoto, Zamfara, Katsina, Kano and Jigawa) while one and half month is suitable for malaria transmission in the zone H (Fig. 9 and 10). Rainfall together with the temperature accumulations from August to September were significant predictors of log-confirmed malaria transmission in the zone H (Yobe and Borno).

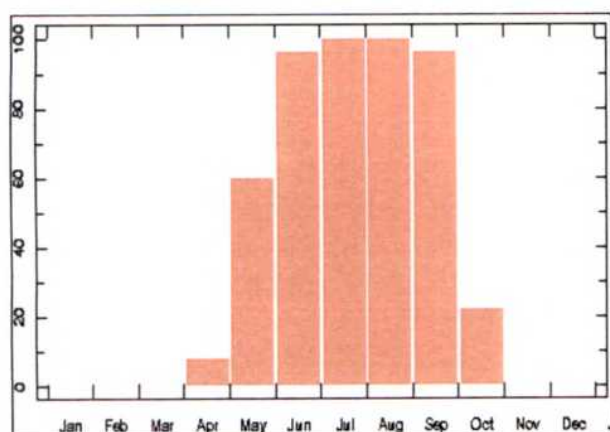


Fig. 7. Monthly climate conditions suitable for malaria transmission in the zone E (the states of Kebbi, Kaduna, Bauchi and Gombe)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

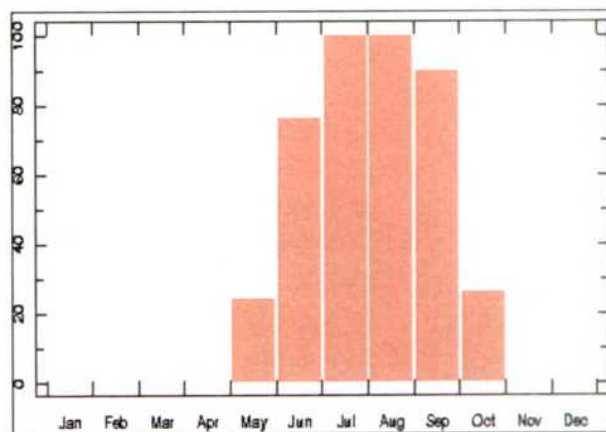


Fig. 8. Monthly climate conditions suitable for malaria transmission in the zone F (the state of Adamawa and the southern part of Borno)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

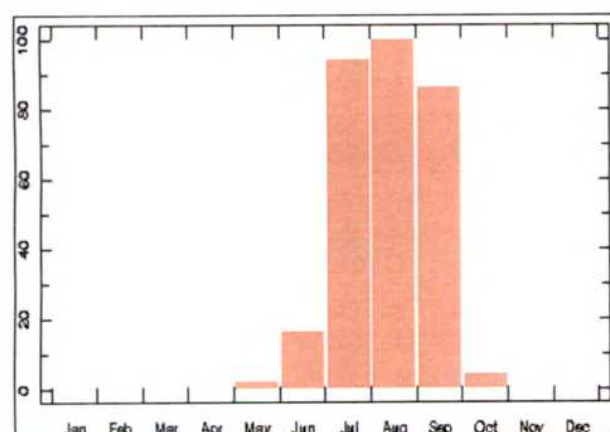


Fig. 9. Monthly climate conditions suitable for malaria transmission in the zone G (the states of Sokoto, Zamfara, Katsina, Kano and Jigawa)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

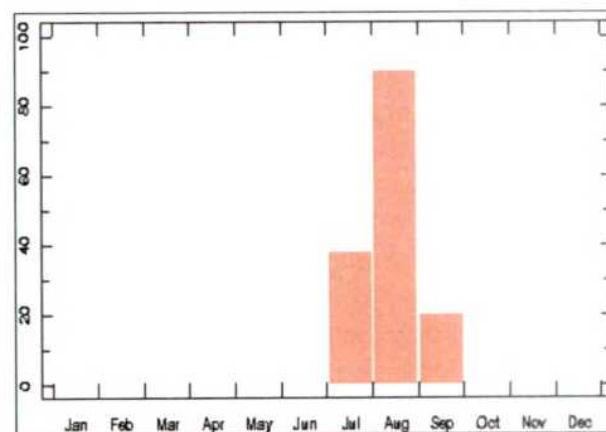


Fig. 10. Monthly climate conditions suitable for malaria transmission in the zone H (the states of Yobe and Borno)

Source: Authors' computation from the data obtained from the International Research Institute for Climate & Society (IRI), The Earth Institute at Columbia University, Lamont Campus, Palisades, New York, USA

The observations show that the zones A to C have the bimodal rainfall distribution, while the zones D to H – the unimodal rainfall distribution. This actually affects the transmission of malaria in the zones (Fig. 3 to 10). In addition to clarifying the seasonal pattern and intensity of transmission in different areas, the figures are useful for targeting and timing interventions, such as indoor residual spraying in the highest risk areas. These zones are in the northern part of the country. The north-

ern part usually receives less rainfall than the southern locations (Fig. 8 to 10). The onset period for the northern stations is May/June, while the cessation period is September/October. The northern stations have only one peak, which is in August. The annual trend of precipitation is positive in most of the southern stations, while it is negative in most of the northern stations. At the 99% confidence limits, all the stations have the mean annual rainfall close to or within the limits except during the

El Niño Southern Oscillation (ENSO) years. These zones have the unimodal rainfall distribution in which rains increase in frequency and amount, beginning in May and peaking in August. The period of rainfall in these zones lasts 3 to 5 months; the onset month is May/June, while the cessation month is September/October (Table 1). These findings are factual because generally rainfall in Nigeria is governed by the annual passage of the Intertropical Convergence Zone (ITCZ), the meeting point of a dry north-eastern low-pressure air mass and a moist south-western high-pressure air mass. The north-eastern movement of the ITCZ and the rain-bearing winds that accompany it mark the onset of the rainy season. Its south-westward movement and the accompanying Harmattan winds mark the beginning of the dry season (Ayoade, 1970; Olaniran, 1985, 1988a, 1988b). Nigeria receives rainfall from the south Westerlies which invade the country from the Gulf of Guinea coast, i.e. the tropical Atlantic. This moist airstream is overlain by the north-east Trades which originate from above the Sahara and are thereby dry and dust-laden. The zone of contact of the two air masses at the surface is a zone of moisture discontinuity and it is known as the Intertropical Discontinuity (ITD) zone. The position of the ITD fluctuates seasonally and the different ITD zones affect different areas of the country at various times. Between January/February and August, the ITD migrates northward and there is a corresponding shift northward of the area of the rainfall activity. However, from the end of August, when the ITD is at its most northerly position, it migrates a short distance inland causing a period of reduced rainfall in the coastal area, a phenomenon known as the 'little dry season' or the 'July/August break'. During this period the south Westerlies become deflected into Westerlies which bring little or no rain. This causes rainfall to increase eastwards over the southern Nigeria during the July/August period.

4.2. Seasonality of climate influences the variation in malaria transmission

The results of this study show that seasonality of climate influences the variation in malaria transmission in Nigeria. It is observed that rainfall plays an important role in the distribution of breeding

sites for the mosquito vector and thereby influences malaria transmission. Though relative humidity and temperature play an important role in the survival and longevity of the mosquito vector, it is rainfall that regulates the development rate of the mosquito to larvae. A high relative humidity lengthens the life of the mosquito and helps the parasite to complete the necessary life cycle so that it can transmit the infection. When the relative humidity drops below 60%, it is believed that malaria transmission cannot occur because of the reduced lifespan of mosquitoes. The relative humidity throughout the year ranges from 69% to 93%, so it is probably not a limiting factor for malaria transmission in this tropical rainforest area. Rainfall generally increases the number of breeding places for mosquitoes. It was noted that both temporary and permanent water bodies are dependent on rainfall. The results of this study are inconsistent with a few studies in the literature, which find a negative or neutral effect of rainfall. Provided that rainfall has a linear dose-response effect on fluctuations in malaria transmission, this effect would emerge after filtering out the seasonal component. The inconsistent relationship between rainfall and malaria transmission could result from the saturating effect of rainfall, for an increase in rainfall fails to produce additional malaria cases when aquatic breeding sites are not limiting for mosquitoes.

In addition, the duration of the rainfall season is important. Heavy rainfall or storms may destroy existing breeding places, interrupt the development of mosquito eggs or larvae, or simply flush the eggs or larvae out of the pools. However, in the case of Nigeria, rainfall is also related to humidity and saturation deficit (the factor that affects the mosquito survival). In the region where temperature is high but rainfall is limited, such as the northern part of the country, the mosquito population increases rapidly at the onset of rain. This is as result of a short development cycle. Thus, two to three months of rainfall may be sufficient to constitute one transmission season. However, where temperature is limiting during the colder season, as is the case of the southern part of the country and upland areas like Jos, mosquito populations increase slowly at the onset of rain. This is so because the area is known for gradual rising in temperature and a long mosquito development cycle.

The findings of this study support other results (Craig et al., 1999; Connor et al., 1999; McMichael et al., 2003; Thomson et al., 2005a, 2005b) that transmission of malaria depends on the weather, which affects the ability of the main carrier of malaria parasites, *Anopheles* mosquitoes, to survive or not. The tropical areas, including Nigeria, have the best combination of adequate rainfall, temperature and humidity allowing for breeding and survival of *Anopheles* mosquitoes. The burden of malaria varies across different regions of the world and even within a country. This is driven by the variation in parasite–vector–human transmission dynamics that favours or limits the transmission of malaria infection and the associated risk of disease and death. Of the four species of *Plasmodium* that infect humans – *P. falciparum*, *P. vivax*, *P. malariae* and *P. ovalis*, *Plasmodium falciparum* causes most of the severity and deaths attributable to the disease. It is most prevalent in Africa south of the Sahara, where Nigeria has the largest population. Also the results of this study concur with the report of the World Health Organization (WHO, 2000), that approximately 50% of the Nigerian population experience at least one episode of malaria per year as a result of climate variability. However, official estimate suggests as much as four bouts per person per year on the average (WHO, 1995, 2002). The trend is rapidly increasing due to the current malaria resistance to the first line anti-malarial drugs (WHO, 2000). The magnitude of incidence and death due to it is a multiple of all other tropical diseases put together.

Also, the results of this study are in conformity with the findings of the IPCC (2001) that malaria is caused by four distinct species of *Plasmodium* parasite, transmitted by mosquitoes of the genus *Anopheles*. They are most abundant in tropical and subtropical regions, although they are also found in limited numbers in temperate climates. Transmission is associated with changes in temperature, rainfall, humidity as well as the level of immunity in humans. Very high temperatures are lethal for the parasite. In the areas where the annual mean temperature is close to the tolerance limit of the parasite, a small temperature increase would be lethal for the parasite. The IPCC noted that at low temperatures, a small increase in temperature can greatly increase the risk of malaria. Hence, the most susceptible to malaria are the areas at the fringes of its current dis-

tribution, such as Central Asia and Eastern Europe. In this context, climate change is unlikely to affect overall mortality and morbidity in tropical Africa as environmental conditions are already favourable for malaria transmission. The vulnerable areas are those where transmission is currently limited, mainly by highland temperatures, such as in East Africa (Kenya highlands, for example). This study adds to the growing evidence linking human diseases to climate fluctuations and suggests that variations in the transmission of malaria in Nigeria and elsewhere are associated to annual changes in climatic conditions. Recently, Craig and others studied the relationship between climatic and non-climatic factors based on a 30-year series of malaria case data in KwaZulu-Natal, South Africa. They found significant linear relationships between seasonal changes in case totals and mean maximum daily temperatures (January–October) of the preceding season, and total rainfall in the current summer months of November–March. A combination of these climatic factors explained approximately 30–50% of the variance in differential case numbers depending on the climate data source used. Although climate appears to account for much less of the variance of malaria in KwaZulu-Natal than in Botswana (where a quadratic function of rainfall alone accounted for more than 60% of standardised malaria incidence anomalies), it is interesting to note that the key high malaria years in KwaZulu-Natal area, e.g. 1988, 1993, 1996, and 2000, correspond with the high malaria anomaly years in Botswana, suggesting that regional rather than local processes are likely to be responsible for much of the inter-annual variation. Given the substantial burden of disease associated to vector-borne diseases in developing tropical countries, it is of utmost relevance to incorporate climate change into public health thinking.

The National Malaria Control Program in Nigeria and other endemic countries should be intensified to reduce the devastating effects the disease exerts on both the economy and human lives. The development of an effective vaccine, along with other malaria control measures, is needed for reducing the burden of malaria in sub-Saharan Africa and worldwide. Although this study may have some limitations, such as a lack of incorporation of other meteorological factors into the analysis, it is strongly believed that the findings are relevant from a public

health perspective to better understand the ecoepidemiology of this and other tropical infections. However, further research is considered necessary in this region and in other endemic areas to develop monitoring systems that will help to predict the impact of climate variability on malarial incidence in the region.

5. Conclusion

Climate variability is widely considered to be a major driver of inter-annual variability of malaria incidence in Africa. The relationships of variability in rainfall, relative humidity and temperatures to malaria transmission in Nigeria were assessed in this study. Malaria still constitutes a serious public health problem in Nigeria. It is responsible for 60% outpatient visits to health facilities, 30% of childhood deaths, 25% of deaths in children under one year and 11% of maternal deaths (4,500 die yearly). In this study, climate suitability for malaria transmission was defined as the coincidence of monthly total precipitation greater than 80 mm, mean temperature between 18°C and 32°C, and relative humidity greater than 60%. Monthly precipitation, monthly temperature and monthly specific humidity data (converted to relative humidity) over land areas were extracted from the Climate Research Unit (CRU, Norwich, UK) Time Series (CRU TS). The results of this study show that seasonality of climate influences the variation in malaria transmission in Nigeria. It is observed that rainfall plays an important role in the distribution of breeding sites for the mosquito vector and thereby influences malaria transmission. The findings of this study are relevant from a public health perspective to better understand the ecoepidemiology of this and other tropical infections.

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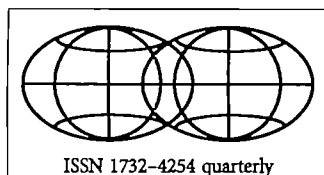
the initial methodology of climate and malarial data analysis on which this study is based.

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The scale and the dynamics of permanent migration in rural and peri-urban areas in Poland – some problems

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Abstract. This article refers to the analysis and the evaluation of permanent migration as observed in rural areas of Poland, especially in peri-urban areas of the Polish cities between the years 1995 and 2011. The article covered all 2,173 rural and rural-urban (excluding urban parts) gminas in the country. In the article there were shown what are the migration volumes and dynamics in rural areas and what is the situation of large cities' peri-urban areas in terms of permanent migration.

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1. Introduction

Migration is one of major indicators of socio-demographic and economic transformations taking place in regions of the country. Migration patterns and directions frequently allow identifying places where jobs, services, etc., are either easily available or in short supply.

This article refers to the analysis and the evaluation of permanent migration as observed in the rural areas of Poland, especially in peri-urban areas of the Polish cities between the years 1995 and 2011. The article covered all 2,173 rural and rural-urban (excluding urban parts) gminas (administrative regions of the 3rd order) in the country. To ensure data consistency and to avoid conclusions based on a single year, the authors calculated mean values for the periods 1995–2000 and 2006–2011. Some of the questions that the authors of the article try to answer are the following: how much do new arrivals contribute to the total population gain in the rural areas; what are the migration volumes (inflows and outflows); what is the status of large cities' peri-urban areas in terms of permanent migration; how dynamically does the volume of permanent migration change; does the peri-urban population in Poland grow faster and faster (i.e. in a growing number of peri-urban gminas, thus constantly extending the perimeter of large cities' influence) or perhaps some signs of deceleration can be seen; and finally does the outflow of city dwellers to rural areas mark another stage of urbanisation in Poland, a so-called counterurbanisation?

2. Research results: the peri-urban areas on the background of rural areas in Poland in the context of permanent migration

2.1. Contribution of migration to rural population gain

Number of population in rural areas in Poland was steadily increasing after the late 1990s, from 14.6 million in 1999 to 15.5 million in 2011 (over 39% of the country's population) (cf. Szymańska, Biegańska, 2010). This growth had two sources: the positive natural increase in rural areas (but gradually declining from 6.1‰ in 1990 to 0.8‰ in 2011) and the positive migration balance that appeared in the rural areas after the year 2000. The migration balance rose from –0.3‰ in 1999 to as much as 2.6‰ in 2011. This means that two major factors driving the growth of rural population were inflows of new residents and the related positive migration balance (Fig. 1, 2, 3). While in the years 1995–2000 rural areas received on average 13 people per 1,000 population annually, in the period 2006–2011 the rate rose to over 14 people. Moreover, the group of rural gminas representing the uppermost range of new arrivals, i.e. 25 and more people per 1,000 population, increased threefold in the analysed period from 2% (1995–2000) to 6% (2006–2011) (Table 1). These rural gminas usually surround large cities and less frequently the medium and small towns (cf. Fig. 1).

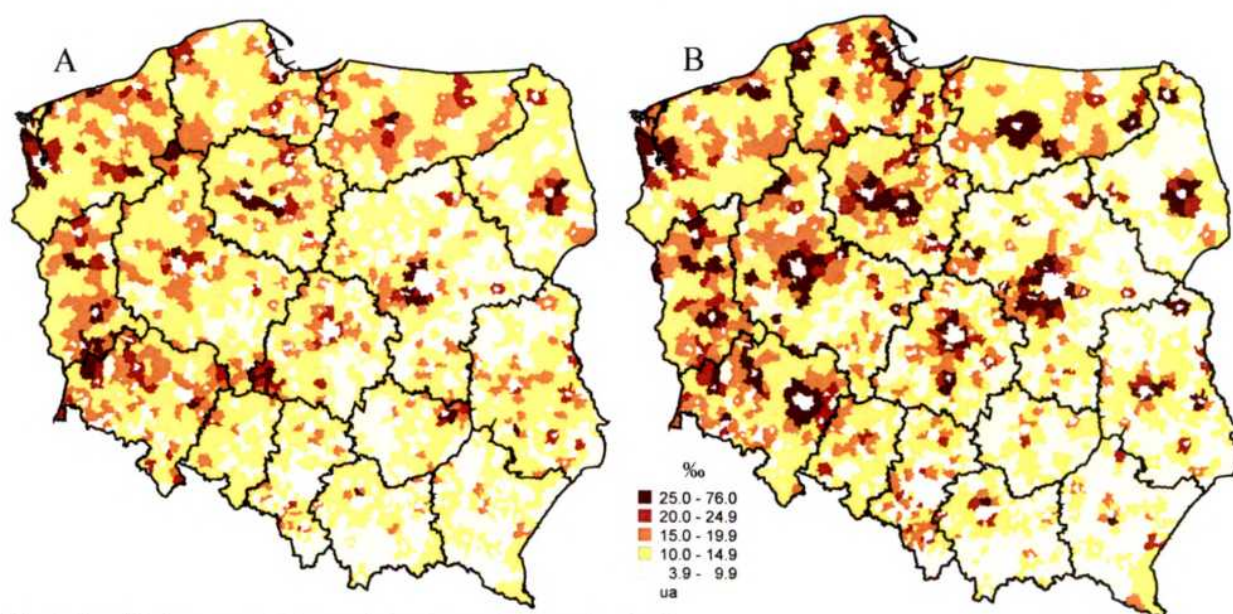


Fig. 1. Total inflow per 1,000 population in rural areas of Poland

Explanation: A – 1995–2000, B – 2006–2011; ua – urban areas

Sources: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank.

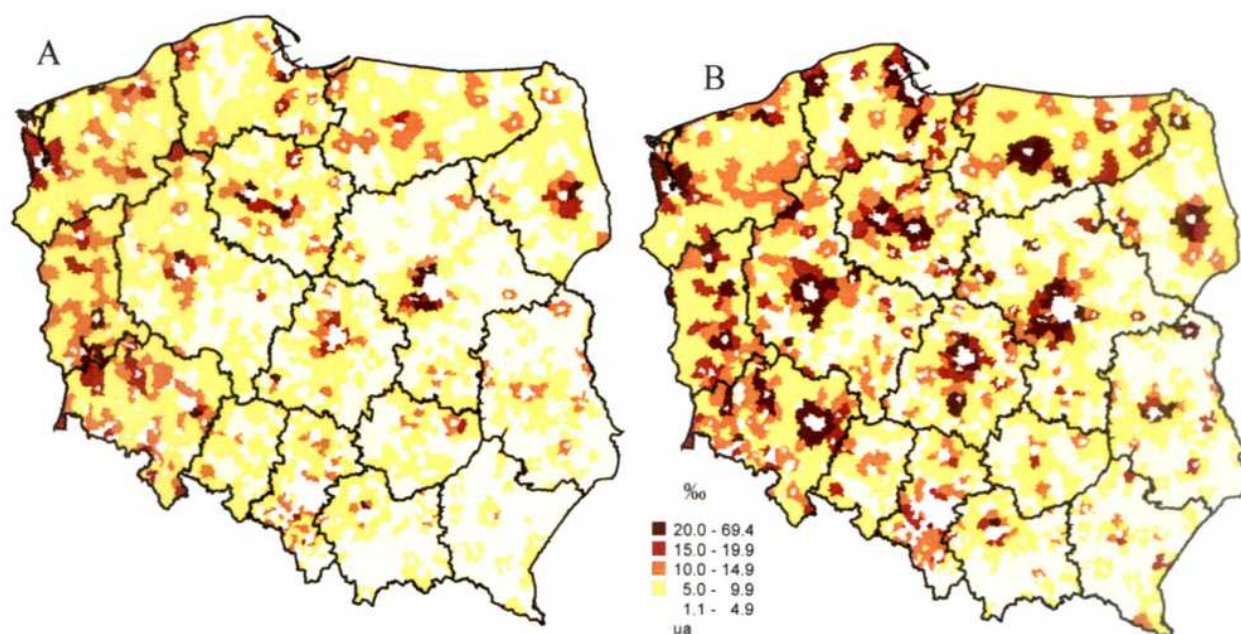


Fig. 2. Inflow from urban to rural areas per 1,000 population in Poland

Explanation: A – 1995-2000, B – 2006-2011; ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

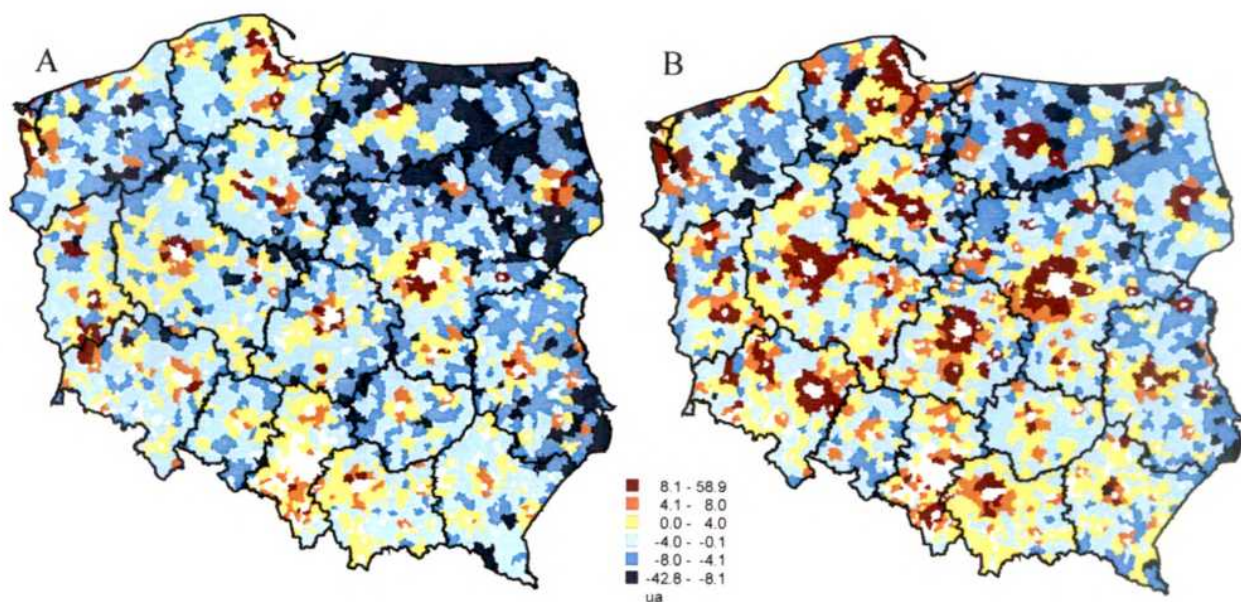


Fig. 3. Total migration balance per 1,000 population in rural areas of Poland

Explanation: A – 1995-2000, B – 2006-2011; ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

Table 1. Some characteristics of migration and population age structure in Poland

	Total inflow per 1,000 population			Inflow from urban areas per 1,000 population	
	1995-2000	2006-2011		1995-2000	2006-2011
PL	11	12	PL	6	7
ua	10	11	ua	5	6
ra	13	14	ra	7	10
a			a		
25.0–76.0	2	6	20.0–69.5	1	6
20.0–24.9	4	5	15.0–19.9	3	6
15.0–19.9	15	13	10.0–14.9	9	11
10.0–14.9	53	41	5.0–9.9	44	41
4.5–9.9	26	35	1.1–4.9	43	36
Migration balance per 1,000 population			Share of working-age population (in %)		
	1995-2000	2006-2011		1995-2000	2006-2011
PL	0	0	PL	59	64
ua	0	-2	ua	62	66
ra	-1	2	ra	56	62
a			a		
8.1–58.9	3	10	66.0–70.3	0	4
4.1–8.0	6	9	64.0–65.9	0	15
0.0–4.0	19	24	62.0–63.9	1	27
-4.0–0.1	39	37	60.0–61.9	3	25
-8.0–4.1	24	17	45.2–59.9	96	29
-42.9–8.1	9	3			

Explanation: a – % of rural gminas within particular percentage bands (N=2,173); PL – Poland; ua – urban areas; ra – rural areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

2.2. Composition of the population flowing into rural areas

An analysis of the findings presented in Fig. 1 requires us to answer the question about the composition of the population flowing into rural areas, that is about the shares of rural residents and urban residents (especially those coming from large cities) in the flows. It is worth mentioning at this point that the latter category of migrants becomes more and more important for the total structure of migrants flowing into rural gminas. In the analysed period, i.e. 1995–2011, migration from urban to rural areas increased from 23% in the years 1995–2000 to 31% between 2006 and 2011 (Table 1). It was also the largest category of all inflows into rural areas. The phenomenon is the most visible and dynamic around large cities (Fig. 2).

Between the periods 1995–2000 and 2006–2011, the average annual inflows of urban population into rural areas increased from 7 to 10 people per 1,000 population. The number of rural gminas characterised by the largest inflows, i.e. in excess of 20 people per 1,000 residents, grew every year. For instance, the number of rural gminas receiving most city dwellers, i.e. 20 and more people per 1,000 population, quadrupled between 1995 and 2011, rising from 28 (1%) to 124 (6%) (Table 1, Fig. 2).

2.3. Changes in dynamics of migration balance

Among 39 Polish cities inhabited by more than 100,000 people (2011 data), slight growth in population was found in only every fourth of them, while the other cities lost large numbers of their inhab-

itants, the most frequent reason being outflows to rural areas that could not be compensated either by new arrivals or natural increase. For instance, in 2011 the rate of natural increase in Łódź was -5.7‰ , the migration balance -2.0‰ and the total population gain -7.7‰ ; in Poznań the rates were, respectively, $+0.8\text{‰}$ and -4.5‰ (total gain of -3.7‰); in Bydgoszcz -0.8‰ and -3.1‰ (-3.9‰); in Sosnowiec -3.5‰ , -4.4‰ (-7.9‰); in Katowice -3.1‰ and -3.7‰ (-6.8‰). Many other large cities in Poland showed similar trends (Szymańska, 2007).

The migration balance indicates that new arrivals to rural gminas, particularly those located around large cities, are becoming increasingly important for the rural population growth. The annual average migration balance for rural areas being -1 person per 1,000 population at the end of 20th century became positive with the onset of the 21st century, rising to over 1 person in the years 2000–2005 and to over 2 persons between 2006 and 2011. Naturally, the number of rural gminas where the migration balance was positive also grew. Compared with the years 1995–2000, when these gminas accounted for 28% of all rural gminas in Poland, over the period 2006–2011 their proportion expanded to as much as 43% (Fig. 3). It should be mentioned here that while it was not until the year 2000 that the total migration balance for rural areas became positive, being then 0.1 people per 1,000 rural population, the total growth of rural population became positive in 1993 and has been positive since then. This means that the number of rural population increases in Poland every year.

This increase also manifests itself through a larger and larger number of rural gminas where populations expand in real terms, i.e. where both the natural increase and the migration balance are positive, but the migration balance considerably exceeds the natural increase (type C, Webb typology). While in the years 1995–2000 the gminas accounted for 10% of all gminas surveyed, in the period 2006–2011 their rate surpassed 18%.

2.4. Outflow of city dwellers to rural areas as another stage of urbanisation in Poland

Migration pattern and vital statistics changes that we have been able to observe in Poland for over a decade now show that population decreases in

large cities should be attributed to greater numbers of city dwellers moving to the neighbouring rural areas and small towns, whose populations grow because of migration gain. While in 1999 small towns inhabited by not more than 20,000 people accounted for 12% of the total population in the country, in the next decade their proportion increased to 13%.

The varying migration patterns and preferences has led in Poland, as well as in many other European countries, to counterurbanisation that can manifest itself as ex-urbanisation (the better-off urban residents move to rural areas to live there, but they maintain their ties with the city and commute every day to work there), displaced-urbanisation (it occurs when families decide to move to new places to seek new jobs and lower living and housing costs) or anti-urbanisation (it takes place when people who reject the urban lifestyle and show anti-urban attitudes leave their homes to live in smaller settlements) (cf. Szymańska, Biegańska, 2011). Anyhow I.S. Lowry (1990), C.J.A. Mitchell (2004) and other researchers stress that regardless of what drives the migrants, the ultimate results being dispersion or decentralisation of the urban population and repopulation of rural areas are exactly the same.

2.5. Peri-urban areas in Poland in the light of selected socio-demographic and economic indicators

The research conducted by Szymańska, Biegańska, and Gil (2009) showed that rural areas lying around large cities are usually targeted by young, working-age population. As a result, this age group increases its proportion in the total rural population. Between 1995 and 2000, the working-age rural population typically represented 56% of all rural population, but over ten years later the rate went up to 62% (2006–2011). The number of rural gminas characterised by the highest rates of the working-age population (62% and more) steadily grew. While in the years 1995–2000 such units constituted only 1% of all rural gminas, in the period 2006–2011 the rate reached as much as 46% (see Table 1, Fig. 4). As far as the absolute numbers and percentages are concerned, the working-age population grew the most in the peri-urban areas of large cities, such as Warsaw, Poznań, Olsztyn, Wrocław, and many others.

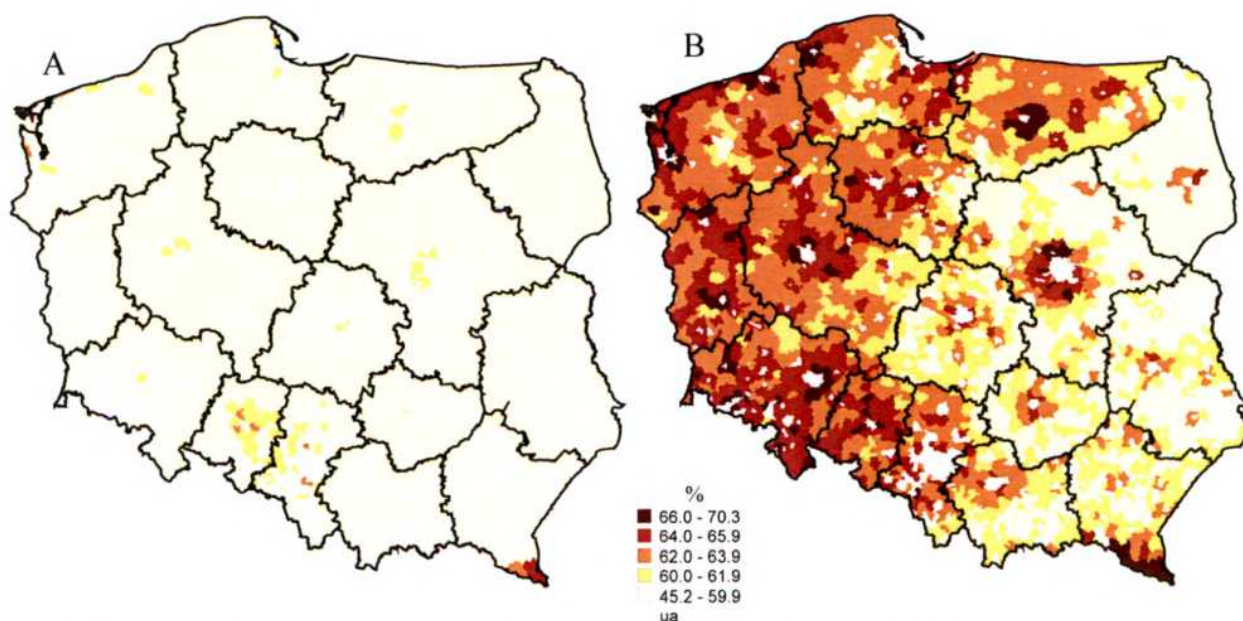


Fig. 4. Share of working-age population in total population number in rural areas of Poland

Explanation: A – 1995-2000, B – 2006-2011; ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

The above situation apparently contributed to larger shares of population with secondary and tertiary educational level in the total population number aged 15 years and older, likewise the population with the main source of income outside agriculture in the total population number with own income sources. Again, the trends are the most noticeable in the areas surrounding large cities (Fig. 5, 6, Table 2). For the same reasons, the rural population also becomes more and more business-minded every year, as illustrated by the growing numbers of entities of national economy (firms) per 1,000 working-age adults. The

working-age residents set up new firms and create more new jobs. Compared with the period 1995–2000 when 1,000 working-age individuals accounted for 69 firms, over the next decade the rate increased to 97 firms (2006–2008). In rural areas, people living in the peri-urban areas are the most entrepreneurial among all rural residents and they establish new firms the most actively (Fig. 7). Because of that, the peri-urban gminas of some large cities have as many as 150 and more firms per 1,000 residents, which rate largely exceeds the national average for Poland (150 in the years 2006–2008) (Table 3).

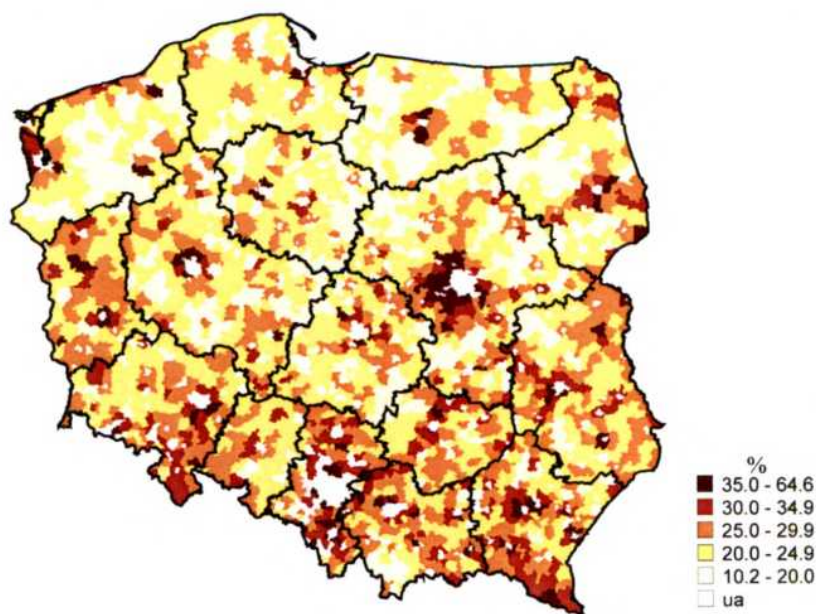


Fig. 5. Share of population with tertiary and secondary educational level in total number of population aged 15 years and older in rural areas of Poland in 2002

Explanation: ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

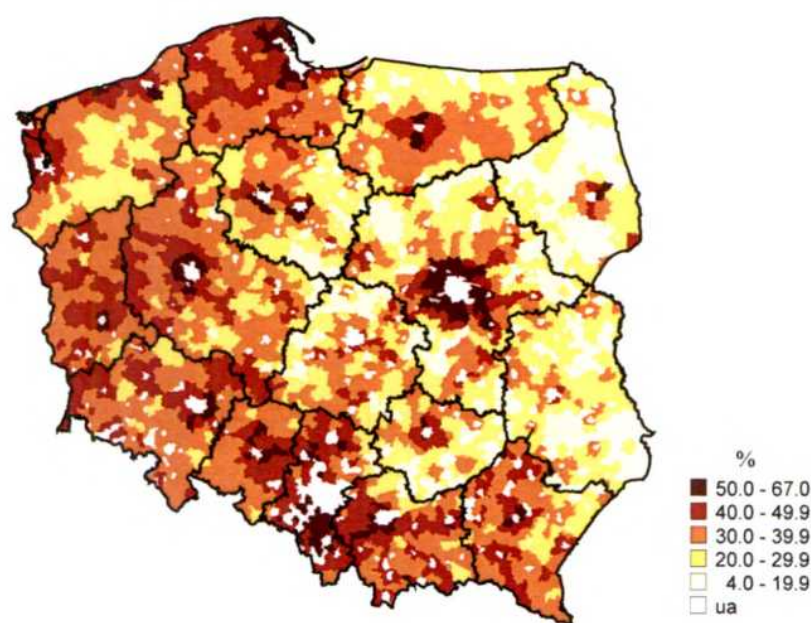


Fig. 6. Share of population with the main source of income outside agriculture in total population number having own source of income in rural areas of Poland in 2002

Explanation: ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

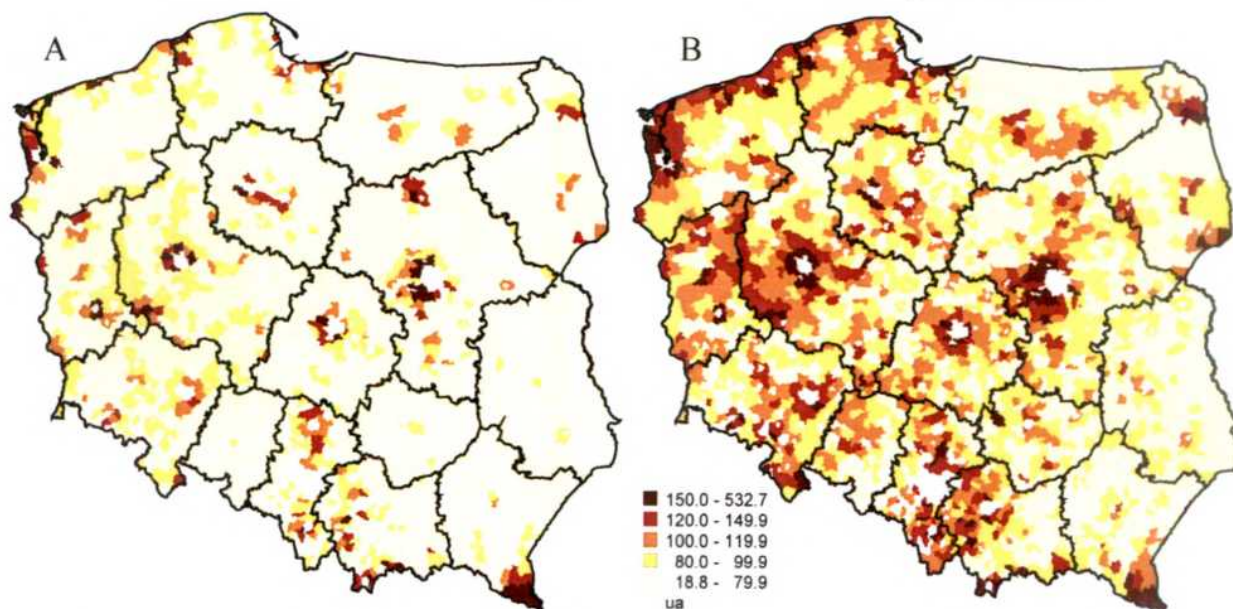


Fig. 7. Number of entities of national economy per 1,000 working-age population in rural areas of Poland

Explanation: A – 1995-2000, B – 2006-2008; ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

Table 2. Some characteristics of population educational level and source of income in Poland

Share of population with secondary and tertiary population (in %) (2002)		Share of population with the main source of income outside agriculture (in %) (2002)	
PL	42	PL	46
ua	-	ua	-
ra	-	ra	-
a		a	
35.0-64.6	6	50.0-67.0	6
30.0-34.9	10	40.0-49.9	20
25.0-29.9	25	30.0-39.9	34
20.0-24.9	40	20.0-29.9	26
10.2-20.0	19	4.0-19.9	14

Explanation: a – % of rural gminas within particular percentage bands (N=2,173); PL – Poland; ua – urban areas; ra – rural areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

Table 3. Some characteristics of population entrepreneurship and housing in Poland

Entities of national economy per 1,000 working-age population			New residential buildings completed per 1,000 population		
	1995-2000	2006-2008		2004-2005	2006-2008
PL	113	150	PL	1	2
ua	138	181	ua	1	1
ra	69	97	ra	2	3
a			a		
150.0–532.7	2	5	10.0–25.9	1	2
120.0–149.9	2	9	5.0–9.9	7	9
100.0–119.9	4	18	3.0–4.9	12	16
80.0–99.9	12	30	1.0–2.9	39	44
18.8–79.9	80	38	0.0–0.9	41	29

Explanation: a – % of rural gminas within particular percentage bands (N=2,173); PL – Poland; ua – urban areas; ra – rural areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

More people coming to rural areas stimulate the building industry, as new residents boost the demand for residential buildings outside the towns (cf. Szymańska, Biegańska, 2012). Again, most new houses are erected in the areas surrounding the large cities (cf. Fig. 8).

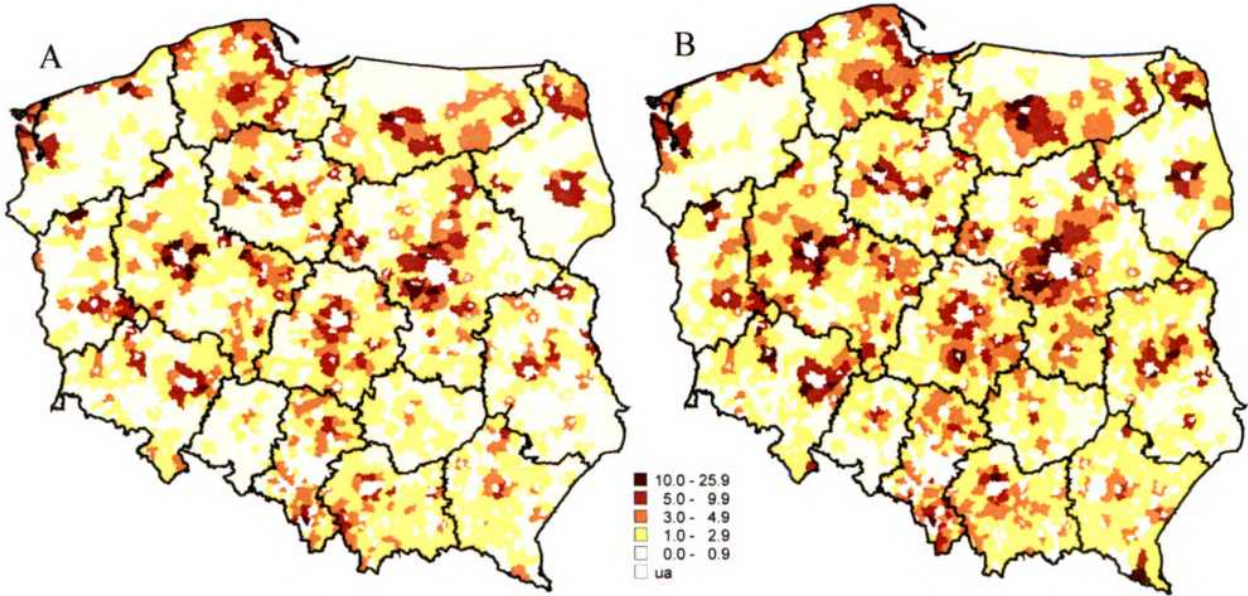


Fig. 8. Number of new residential buildings completed per 1,000 population in rural areas of Poland

Explanation: A – 2004-2005, B – 2006-2008; ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

3. Peri-urban areas in Poland in the context of principal components method as conclusion

To identify similarities and differences and to ensure a more objective quantification of the chang-

es occurring in Polish rural areas, the multivariate statistical analysis were employed in the investigation, i.e. the principal components method. Twelve variables were selected for analysis, namely x_1 – inflow of urban population into rural areas (%), x_2 – population density (persons/km²), x_3 – share of

the working-age population (%), x_4 – share of population with secondary and tertiary educational level (%), x_5 – share of population with a main source of income outside agriculture (%), x_6 – number of entities of national economy per 1,000 population, x_7 – number of rooms per person, x_8 – number of new residential buildings completed per 1,000 population, x_9 – cubic volume of new residential buildings completed per person (m^3), x_{10} – share of dwellings fitted with water-line system (%), x_{11} – share of dwellings equipped with toilet (%), and x_{12} – share of dwellings equipped with central heating (%).

One of the important findings arising from the investigation is that rural gminas surrounding large cities usually form a separate and clear-cut group (cf. Fig. 9), irrespective of the research procedure applied. In the principal component analysis, the first principal component of eigenvalue 6 extracted from the statistically significant variables (representing 77% of total variance) explained as much as 51% of the total variance. The spatial picture it has produced indicates that the rural gminas lying around large cities are generally different from their counterparts (component value ≥ 1.5).

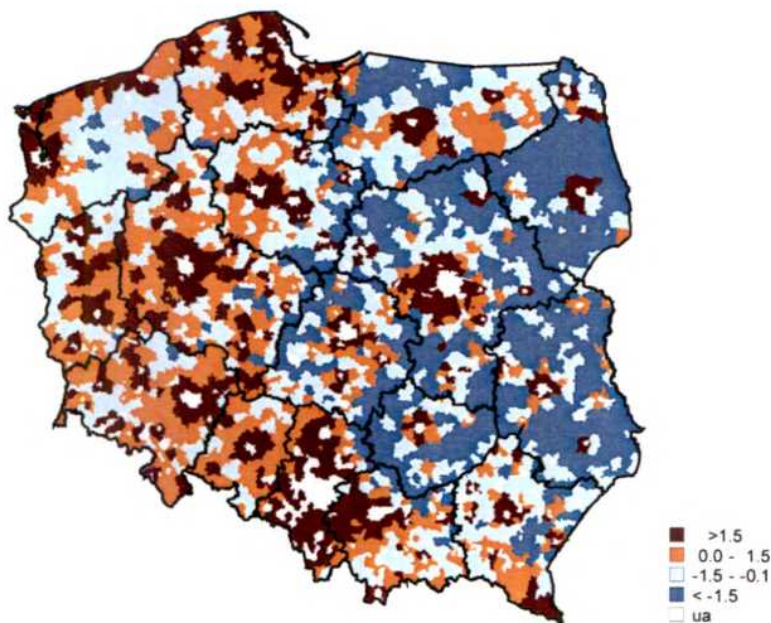


Fig. 9. Rural areas in Poland according to the principal components method

Explanation: ua – urban areas

Source: Developed by the authors based on data available at Central Statistical Office, Regional Data Bank

The overarching conclusion is that both urban and rural areas in Poland have undergone major socio-economic changes since the early 1990s. The investigation has demonstrated that rural areas, particularly those surrounding large cities, keep receiving more and more new residents, mostly the working-age adults who rejuvenate the areas' demographic structure and indirectly boost economic activity that brings larger numbers of new firms and contributes to the expansion of social and technical infrastructure. All these processes drive the growing competitiveness of the peri-urban gminas.

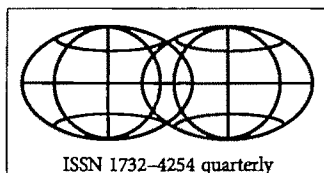
Acknowledgement

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Churches of Greater Mumbai – a physio-cultural appraisal

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Abstract. Greater Mumbai is a mosaic of diverse languages, cultures and religions. Churches in Mumbai reflect the long association of Mumbai City and Salsette Island which comprise the present day Greater Mumbai. The churches of Greater Mumbai are relics of art, architecture and culture, as well as multi-lingual and religious tolerance. They enjoy a great history which dates back to the 16th century. With the coming of the Portuguese and British, the churches and their surrounding environment have undergone a spatial and temporal change to withstand the needs of the society with increasing population and prevalent intra-urban migration. The contributions of East Indians, Goans, Mangaloreans, Tamilians and Keralites to the progress and development of the Church in the area is immense. The present paper is an attempt to highlight the environmental history of the churches chronologically with sketches and maps. The study also analyses the geographical background and population composition in and around the churches. It brings out the emerging spatial pattern of churches in Greater Mumbai as well as the changes that have taken place over a period of time. Moreover, the paper describes the contribution of socio-fugal and sociopetal forces for generating the socio-environmental scenario in the contemporary spatial framework.

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1. Introduction

Greater Mumbai is a mixture of diverse cultures and religions. As different religions have to assert their identity, it is important to know the truth behind the origin, development and changes that have taken place within and outside the church premises. The sociopetal and sociofugal forces responsible for the changes have generated a socio-environ-

mental scenario in the contemporary socio-spatial framework of Greater Mumbai. Little is known about the Christian community on the West Coast of India until the beginning of the 14th c. In the 3rd c., North Konkan (Western India), received the Gospel in apostolic times through the teachings of St. Bartholomew (The Catholic Directory of the Archdiocese of Bombay, 1982).

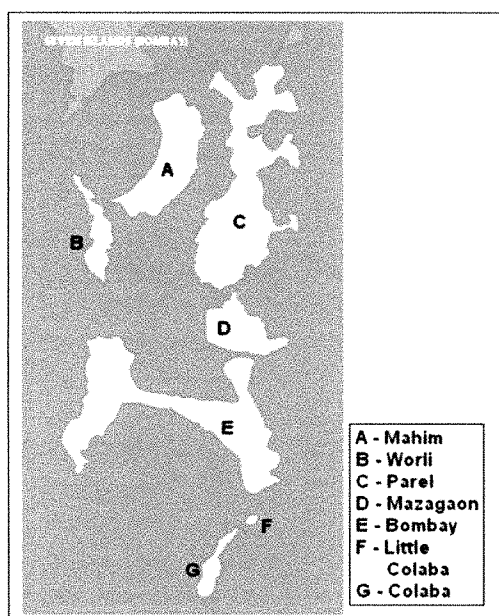


Fig. 1. Seven Islands of Bombay

Source: http://en.wikipedia.org/wiki/History_of_Mumbai

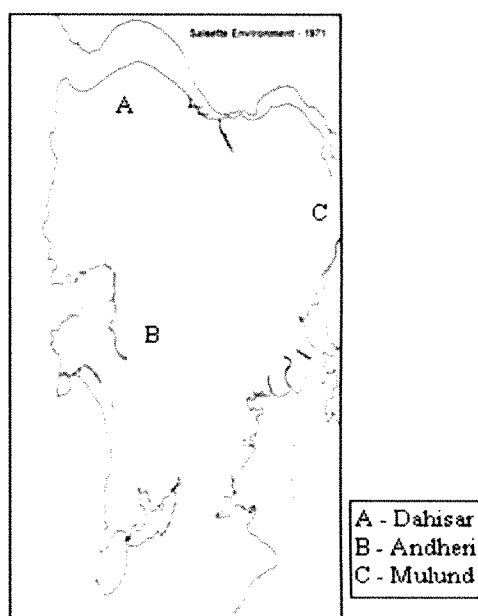


Fig. 2. Salsette Environment

Source: Survey of India, Toposheet 1971 -47E/3,47A/15,47A/11

The first Christians in North Konkan were casual merchants who came there from other Christian countries. In the 6th c., Kalyan in the north-east of Mumbai had a Bishop appointed from Persia, while Chaul to the south of Mumbai had Christians in the 10th c. As there were seven islands of Mumbai City, they were called Heptanesia. The southernmost of them was a narrow promontory of a rocky island known as Colaba. In a close proximity to it was a triangular island known as Old Woman's Island; further to the north-west was

Mazgaon, to the north of it – Parel, to the west of Parel was the island of Mahim and to the south-west of Mahim, Worli. The four islands of Mazgaon, Parel, Mahim and Worli were surrounded by marshes. These seven islands (later known as Seven Islands of Mumbai) were inhabited from earliest times by the Kolis, the original inhabitants of Mumbai.

Even before the Christian era there were considerable trade links between India, Persia, Syria and Egypt in precious stones, muslins, pepper and spic-

es, undertaken both by land and sea. Sopara was the most famous port on the Western Coast.

However, it was observed that during the reigns of the Silhara Kings (810–1260) their kingdoms contained many mosques, churches, synagogues and fire temples. The Muslim Commandant, having his headquarters at Thane, destroyed a number of Hindu temples and Christian churches, according to the reports of a French Dominican Friar, Jourdain de Severac. He landed at Thane at the end of 1320, accompanied by four Franciscans (Blessed Thomas of Tolentino, James of Padua, Peter of Siena and Brother Demetrius of Tiflis). These Franciscans were murdered by the Muslim Governor of Thane on 9 March 1321 and are now known as the Martyrs of Thane.

According to Jourdain, the Christian community and settlements were dispersed. He himself visited Sopara in Bassein (now Vasai), where he found a small Christian community with a church. He baptised about 90 people there. A little later he baptised 115 people in Broach and 35 between Thane and Sopara.

The Indian Church, whether in the North Konkan or Malabar, witnessed the 'dark age' between the 9th c. and the beginning of the 14th c. The Christians were then reduced to "nominal Christians". It can be stated that the evangelising activities in Thane and Sopara constituted the first mission of Rome in the North Konkan – the first Roman Catholic Missionary in India. In the 14th c. the Christians of Europe did believe in the survival of an ancient Christianity on the Western Coast of India.

This account of the early times may be concluded with the story of the martyrdoms of St. Bartholomew and St. Thomas. However, the apostolic origin of Christianity in the North-Konkan is still disputed by some scholars.

Apart from being a sacred place of worship, the churches of Mumbai are a rich repository of architectural specimens. The contributions of East Indians, Goans, Mangaloreans, Tamilians and Keralites to the progress and development of Church is immense.

The study is an attempt to highlight the changing urban environment with reference to churches in the various time periods in Greater Mumbai. Greater Mumbai constitutes of the City Island and Salsette Island (Fig. 1 and 2). Today, the City Island

(Mumbai City District) and its extended suburbs (Mumbai Suburban District) are known as Greater Mumbai. At present, Greater Mumbai occupies an area of 481.5 sq. km, out of which the city proper on the main island covers an area of 67.3 sq. km, while the rest is taken by the inner and outer suburbs.

2. Compilation of the database and documentation

The data were collected on the basis of field visits to the churches and studies of the available documentation. There were about 20 church records collected for the purpose of this investigative study. The collected data were analysed and represented through maps. The spatial analysis of the churches revealed the environmental history.

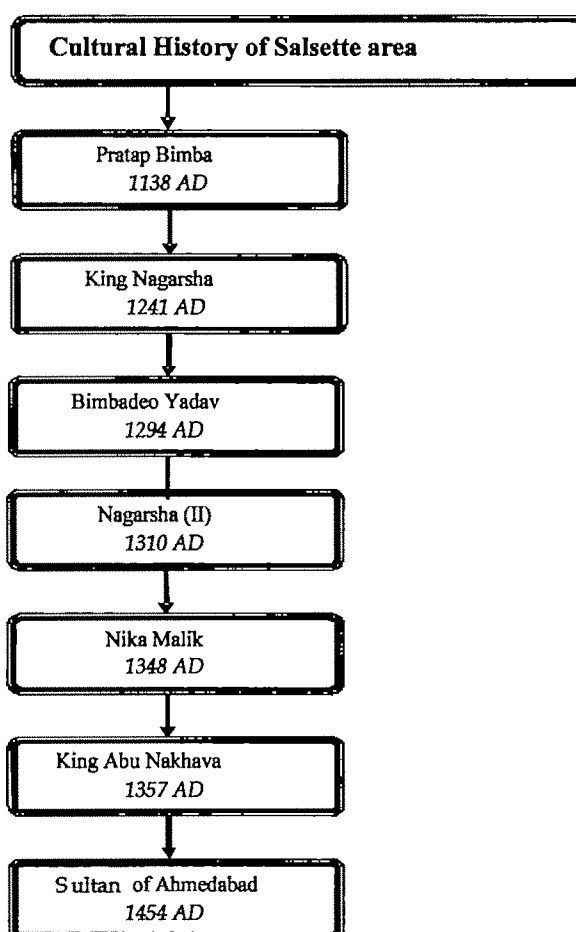


Fig. 3. Cultural History of Salsette Area

Source: Authors' own compilation

There were four small Rajas holdings in the Salsette area. Most of the region was wild and scarcely populated. Prosperity, enjoyed by the people during the height of the Silhara Kings, was gone. Therefore, Pratap Bimba, the younger brother of Govardhana Bimba of Champaner, decided to repopulate the region. In 1138 he marched with an army of 10,000 horsemen, accompanied by one Naikrao as his chief of the staff and Raghunathrao as his minister. Pratap Bimba did not require more than two months completing the conquest from Daman to Walukeshwar. Then, he established his capital at Deerghipati, renaming it Mahikavati (Mahim). As a result, Pratap Bimba established his power in Shasti and the Seven Islands, where he ordered 66 different families from Champaner and Paithan to be settled there. His son, Mahi Bimba, brought to the islands the following: 27 families of Somavamshi dynasty, 12 of Suryavamshi dynasty and 9 of Sheshavamshi (bhandari) caste. It is believed that the name Salsette is derived from the word *Shasti*, which in Marathi is Sahasash-ta that could be the 66 families which king Bimba brought from Paithan. Pratap Bimba and his successors gave peace and prosperity to the land (Joshi, 1956). They were occasionally disturbed by other Rajas but they successfully defeated them and established their power on the islands. All the villages are south of the Bassein Creek.

In 1241 Nagarsha, the King of Ghanadivi, attacked Janardan Pant, the Prime Minister of Keshavdev, who was the son of Mahi Bimba. The power passed on to the hands of Janardan Pant as Keshav died without a male successor. King Nagarsha became the ruler of Mahim and all the Shasti islands (Fig. 3). By 1294 Bimbadeo Yadav had attacked Konkan. Bimbadeo Yadav was succeeded by his son Pratapsha. Tripur Kumar and his son Nagarsha II attacked the forces of Pratapshain around 1310. Nagarsha II was helped by one Jaichuri and his son Bhagadchuri. Bhagadchuri invited Muslim Nika Malik of Wadnagar to attack the domain of Nagarsha. Nika Malik, who was waiting for such an opportunity, destroyed the forces of Nagarshain 1348. With this defeat the Hindu dominion ended. After the death of Nika Malik, the Seven Islands and Shasti were handed over to the Nayate King Abu Nakhava in 1357. Dafarkhan, the son of Ahmedshah and the sultan of Ahmedabad, conquered Mahim. It was during this time that the independent

kingdom of Mahikavati (Mahim) came to a close and the Ahmedabad Sultans began to rule the land. The independent principality of Mahikavati, which consisted of the Seven Islands and Shasti and was first established in 1138 by Pratap Bimba, was thus merged under the rule of the Sultans of Ahmedabad in 1454.

Mumbai is situated on an off-shore island group (Seven Islands) off the mouth of the Ulhas River. These islands were covered by fishing hamlets. In fact, these islands were discovered by the Portuguese as a site for a good natural harbour, but were given to the British in 1661 as a part of a marriage dowry.

3. Characteristic of Salsette

Originally, the entire coastal environment was a mosaic of tidal inlets with mangrove, mudflats, salt marshes, islands, inlets, creeks, hillocks and estuaries.

Slow siltation, over the centuries of carrying a heavy sediment discharge during monsoon downpours, was a result of intensive deforestation. Urban development has led to massive land reclamation and today approximately 20% of Salsette is a result of this process. Thus, the present day configuration of Salsette is a product of a succession of land reclamation and coastal area siltation which joined island areas together. Salsette itself substantially increased its areal extent through the welding of Trombay and a number of outlying islands like Versova and Madh with the Mainland Salsette in the early part of the 20th c. This region was inhabited from the earliest times by fishermen and agriculturists, mainly the Agris, Kolis and Bhandaris.

4. Churches in Greater Mumbai

4.1. Environmental history of churches in Greater Mumbai

Mumbai, the capital of Maharashtra and the commercial capital of India, is located on the western coast of India at the intersection of the latitude of

18°53'45"N and the longitude of 72°52'E, spreading over an area of 437.71 sq.km.

The major geographical characteristics is the insular site, which originally consisted of seven islands of Colaba, Mazgaon, Old Woman's Island, Wadala, Mahim, Parel and Bombay. The significance of reclamation was realised in the 17thc. and the original Seven Islands were merged with each other over time. As a result, in the 1950s the administrative boundary was extended into Salsette, which was already connected to the City Island through two causeways at Sion and Mahim.

Churches found their place in such surroundings. Most of the churches are located in and around *gaothans* (local name for a village). The surrounding lands were basically marshy area, jungle land, paddy fields, ponds, creeks, coconut groves and mudflats. The only solution to linking these areas was reclaiming them. Churches were built around such reclaimed areas.

4.2. Churches and the urban landscape

The oldest churches in Greater Mumbai are located in the Salsette region. Out of 86 churches in Greater Mumbai 25 are located in the City Island area while 61 are located in the Suburban Salsette region. The oldest churches, which were erected around the 16th c., are in the Salsette region.

The Catholic population is in a steady decline in certain districts of Greater Mumbai, some of the main reasons being migration to the neighbouring district. Catholic youth migrating to other countries, and certain areas having a large population of senior citizens which is reflected in the socio-economic environment. The birth-death rate reflects the socio-economic progress made by the community. In this direction, the Church spreads the message that every individual should enjoy a quality life. Taking this into consideration certain middle-class couples opt for a single child.

4.3. Churches and the social environment

Churches have always played a vital role in the socio-economic development of the landscape surround-

ing them. They have been institutes of education, health, social welfare, non-formal education, special education, counselling and culture. In the early times of Mumbai, within three centuries, seven west-coast islands had evolved into the Bombay Peninsula, then into a flourishing trade centre, ultimately becoming the cosmopolitan, high rise metropolis of Mumbai.

From the 16th to 21stc. Mumbai's land use pattern has changed from coconut gardens, rice fields and fishing villages to cotton mills, docks and railways in the 19thc. and, more recently, to shopping malls, skyscrapers and urban slums (Dossal, 2010). In earlier times Mumbai reflected physical features such as swamps, mudflats, islands, rivers and their tributaries, lakes, forests and hillocks. Churches in Mumbai were located amidst these serene surroundings from the 16thc. There were 21 churches located in Greater Mumbai from the 15th to 17thc. (Fig. 4 and 5). Most of these churches were surrounded by mangrove and swamps which were reclaimed later on with the passage of time.

In 1924 Salsette was privileged to have physical features such as reserved forests, mudflats, salt-marshes, creeks, hillocks and lakes (Fig. 6). Churches found their locations in such setting. Most of the churches were located in and around the 66 villages (Shasti) which were mainly *gaothans*. This clearly reflects that the 66 villages played a major role in the location of churches. These were regions which already had a settlement base so it was important for religious institutes to be constructed. Such villages often formed a central nucleus. The *gaothans* in the west of Mumbai had a larger number of churches compared to the east part.

The year 1971 reflects a major change in the land use pattern of Salsette (Fig. 7). Most of the areas which were formerly covered by marshes were converted into salt pans. This may be due to economic necessity. Massive reclamation took place in and around the Salsette region. The number of churches also increased around the Shasti region. By 1971 there were 41 churches in Salsette, all located in the surroundings of the 66 villages. Reclamation and redevelopment has led to the disappearance of certain villages. The rural landscape was steadily being transformed into an urban landscape.

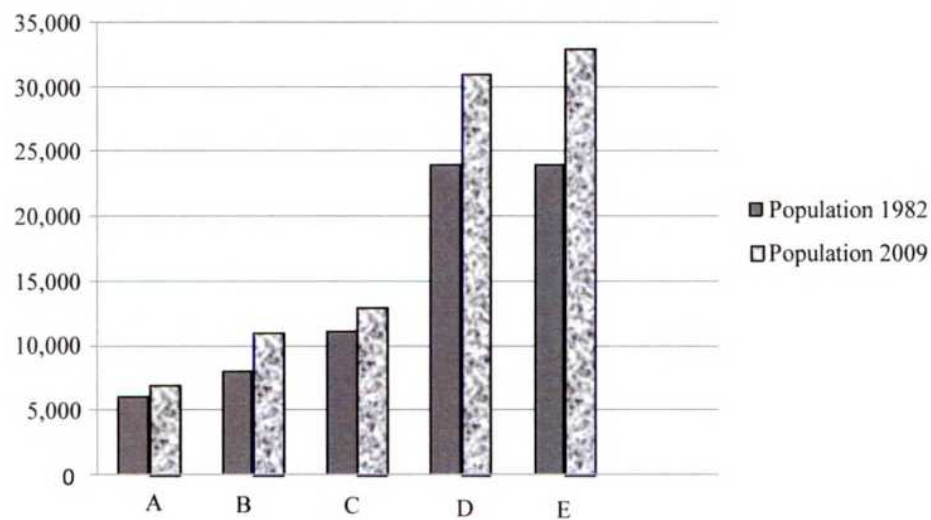


Fig. 4. Population size the in Salsette region

Explanation: A – 16th century, B – 17th century, C – 19th century, D – 20th century, E – 21st century

Source: Authors own compilation

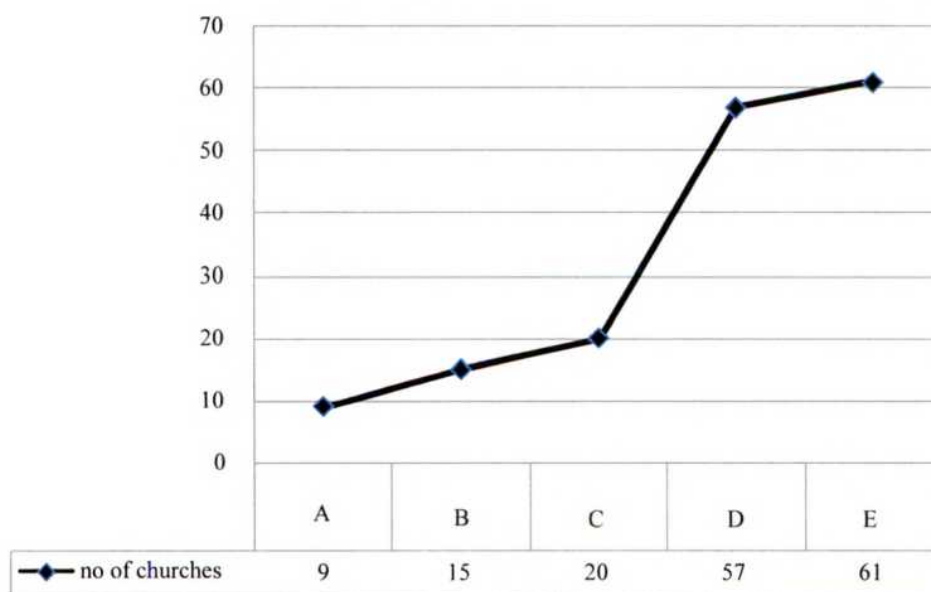


Fig. 5. Number of churches in various centuries in Salsette region

Explanation: A – 16th century, B – 17th century, C – 19th century, D – 20th century, E – 21st century

Source: Authors' own compilation

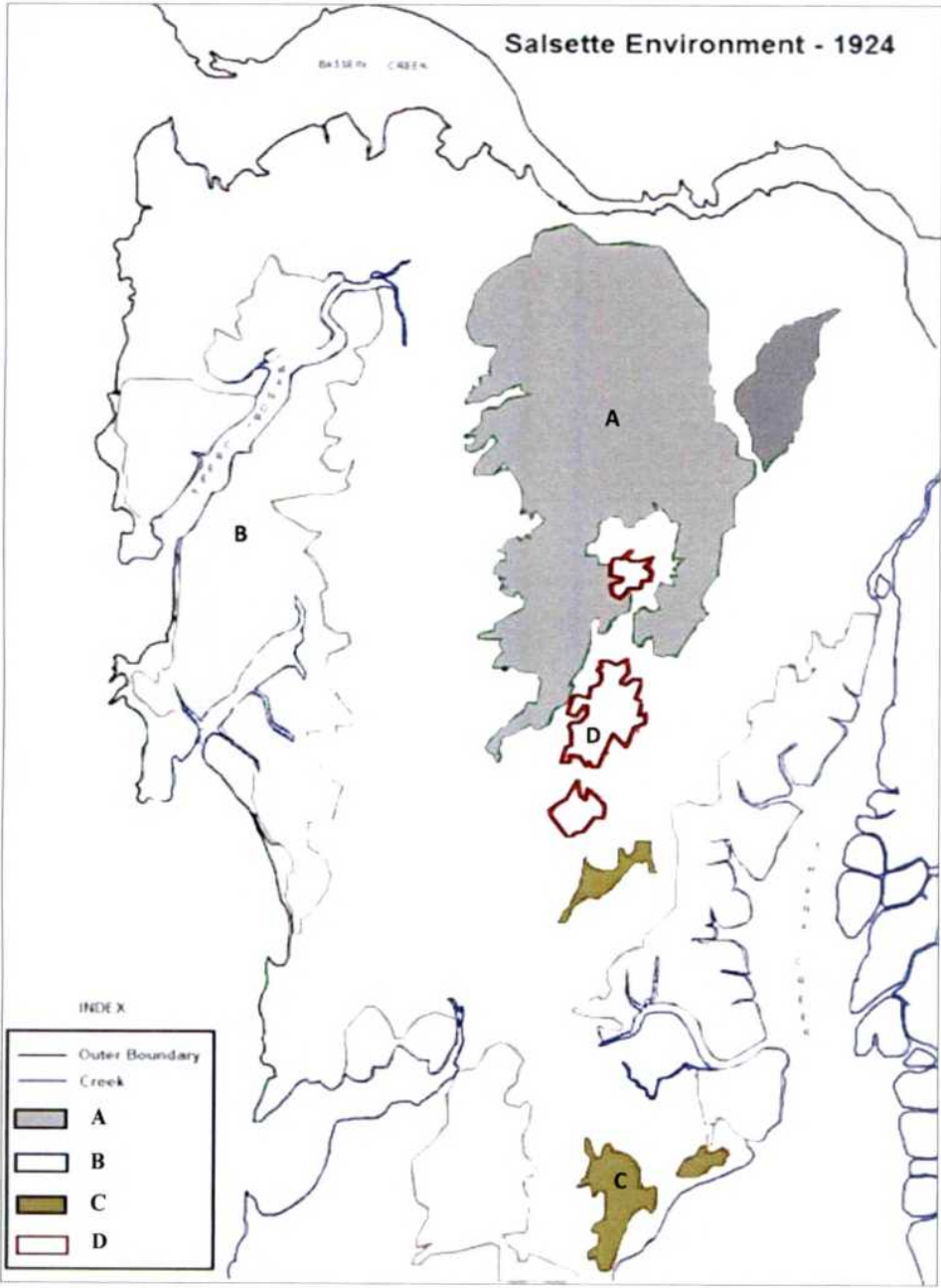


Fig. 6. Salsette'senviroment-1924

Explanation: A – reserved forests, B – mud and marsh, C – hillock, D – lake

Source: Authors' own compilation

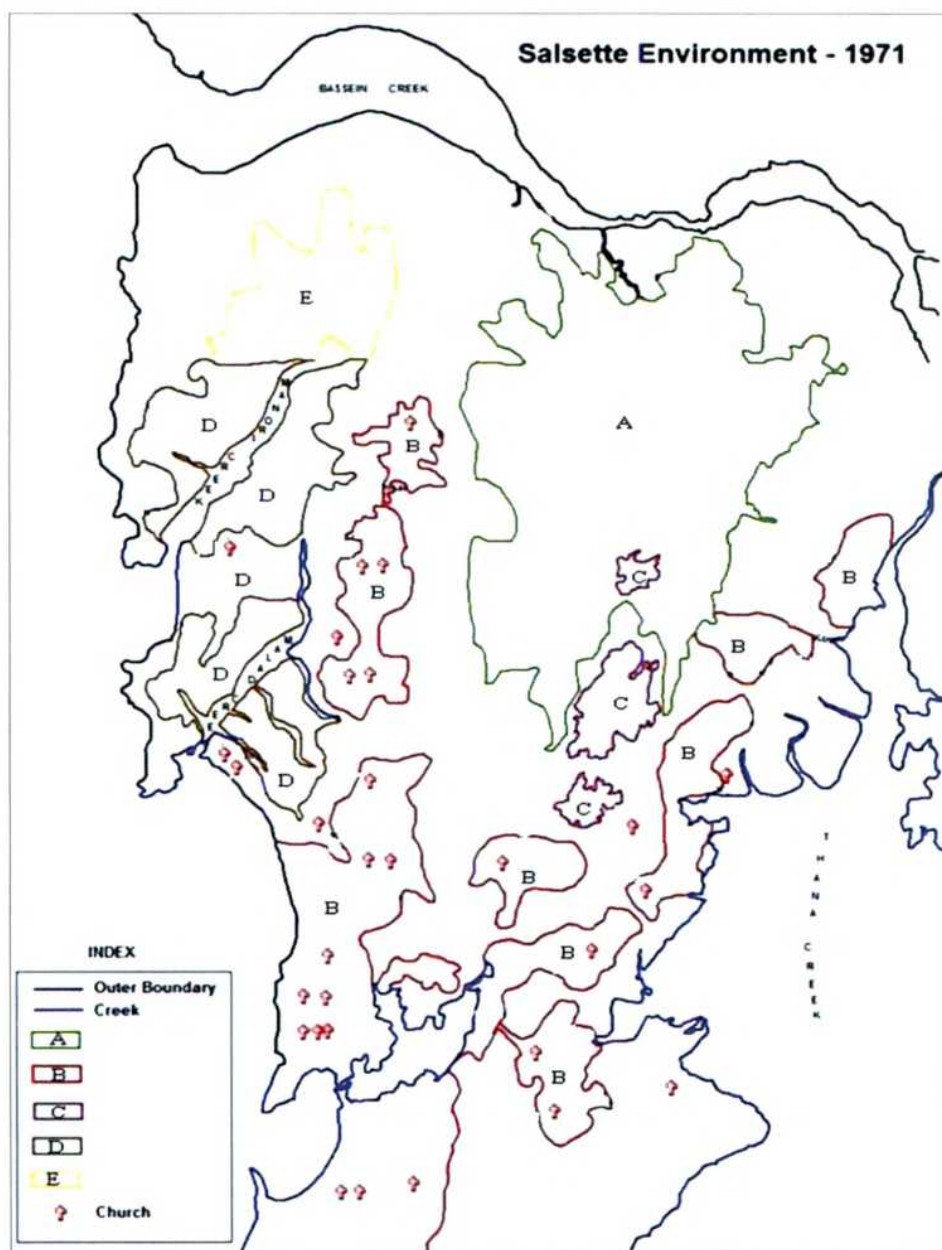


Fig. 7. Salsette's environment-1971

Explanation: A – forest, B – city, C – lake, D – mud and marsh, E – salt pan

Source: Authors' own compilation

Bombay Island originally consisted of seven islands separated by creeks. But in the Portuguese times they were mostly closed up, and there remained only a lagoon of marshy land in the middle, partly used for rice fields, but partly flooded by the sea. In about 1800 this lagoon was reclaimed by the building of causeways and, in the course of time, filled in and built upon. Four larger churches

(St. Michael's, Salvagao, Gloria and Esperanga) and two smaller ones (Parel and Sion) were built by the Portuguese before the English came in 1665. Later the next ones were founded, e.g. Rosary Church, Mazgaon (1794), Cavel Chapel (1794) and the Colaba Hospice (1823).

From 1634 to 1720 the Portuguese Franciscans and secular clergy were in possession of the Island

of Bombay. In 1720 the Franciscans were expelled and the Vicar-Apostolic with his Carmelites took over their place. In 1789 the whole island reverted to the Goa jurisdiction, but this act was reversed in 1791 and the Carmelites were wholly restored. Finally, with a view to suiting both parties, the churches were divided between the Goa clergy and the Carmelites, and by this means the famous “double jurisdiction” was introduced in 1794. Various conflicts arose between the two jurisdictions and churches passed from one to the other until 1862, when the status quo was established. Finally, by the Concordat settlement of 1880, each party was confirmed in possession of what it actually had. The island itself was territorially consigned to the (Propaganda) (1) Archbishop of Bombay but the (Padroado) (2) Bishop of Damaun retained the churches then in the possession of Padroado, and personal jurisdiction over the congregations attached to them, as well as over subjects of Goan and Portuguese origin coming to the Island of Bombay.

Salsette had about 27 churches. Bombay had 4 churches and 2 chapels. These were built mostly between the years 1534 and 1650, and a few others between 1650 and 1700. Their founders were mainly the four great missionary orders—Franciscans, Jesuits, Dominicans and Augustinians, and afterwards the Hospitallers of St. John of God.

After the Maratha conquest (1739) some of the churches were destroyed and others became dilapidated and fell into ruins. When the districts came under the British rule (1780–1800) there was a revival and many of the old churches were repaired, or smaller ones built out of the debris. In modern times, further renovation took place and new churches were gradually added.

The great period of mission-founding, as indicated by church-buildings, took place between 1534 and 1600. During this period the vast majority of the churches now in existence were erected. Comparatively few churches were built between 1600 and 1650, still fewer between 1650 and 1700, and possibly one after that date. After the destruction of churches by the Marathas in about 1740, there seems to have been at least half a century of desolation, during which many Christians were re-absorbed into Hinduism. The re-building of old churches, or the foundation of new ones, began in quite recent times. One or two churches were built

between 1780 and 1800, followed by a few more between 1800 and 1850, and a few more again between 1850 and 1886.

The number of Portuguese who came to the island was small indeed. S.M. Edwardes states that in 1634 there were only eleven Portuguese married settlers in the Bombay part of the island, which number probably did not increase much by 1665. As to the natives, the conversions are said to have been chiefly among the Koli caste scattered all over the island, as well as among the Bhandaris, who were perhaps the first to enter the Church. Some of these converts were organised by the English into a Christian Militia which was retained until the growth of a native army and the appointment of the local police which rendered their services no longer necessary. The Kolis of Cavel were the first parishioners on the Esplanade. Small numbers of Portuguese were scattered around Mazgaon and Mahim, and there were communities of converts living on the Jesuit estates of Parel and Naigaon. The Christian population formed a considerable proportion of the total population of 10,000, and the Indian converts contributed largely to the rise and development of Bombay – “Thousands of Indian families” – writes Dr da Cunha – “had been converted by the Portuguese to Christianity; and it was from them that the early British government drew its supplies of clerks, assistants and secretaries” (Da Cunha, 1900, pp.: 232–233). They were the first fruits of the instruction and education imparted to them by the Portuguese priests; at a time, moreover, when there was hardly a Hindu, Moslem or Parsi who could read the Roman characters. And they were the early instruments for spreading the influence of the new rule among the natives of Western India, or the first helpers to the expansion of the British power throughout the country.”

5. Conclusion

Churches in Greater Mumbai were basically located in *gaothans*. Most of the population in these *gaothans* were fishermen or farmers. With the passage of time the physical as well as social environment of the *gaothans* have undergone a change due to increasing urbanisation and the changing social

mindset of the people. Redevelopment of *gaothans* at a microscale has changed the landscape of the entire region which now reflects a vertical growth.

The metropolitanisation of Greater Mumbai has led to in-migration as well as out-migration of different ethnic groups. The space crunch is the most vital reason for the conversion of the original *gaothans* into highrises. Some *gaothans* still exist while others have been replaced by skyscrapers.

The social environment has also undergone a profound change. *Gaothans* were originally closely knit which formed small nuclei. These communities were mostly joint families but with the change in social attitude, most of the young generation prefers to stay in nucleated families. The Salsette region thus reflects a changing scenario in a spatial framework, in terms of the physical as well as social environment in the years to come.

The physical structure of churches is also undergoing redevelopment due to which the heritage value is lost. Preservation of such relics of the past can only relate back to history making Mumbai a geo-historical anthropological museum and a true centre of diverse varieties and types of mankind, far surpassing the mixed nationalities.

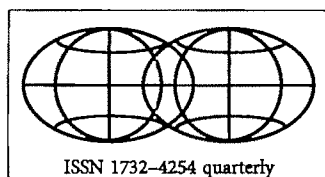
Notes

- (1) Propaganda was a congregation established in 1662 for the propagation of the faith (*de propaganda fide*) in Rome.

- (2) The Portuguese word “*padroado*” means royal patronage, under the King of Portugal. The King used to nominate candidates for bishops who were later approved by Vatican; all missionary expenses were borne by the King of Portugal.

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Staff qualification and the quality of tourism-related services in the Nitra region

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Abstract. The study attempts to justify the importance of the human potential quality, one of the key factors for the development of tourism industry. Moreover, the study attempts to establish a correlation between the human potential quality and the quality of tourism-related services. Next, the study emphasizes that not only geography-related factors, such as natural, historical and cultural sights, climatic and weather conditions getting the attention and interest by tourists, are vital for tourism industry. The human potential quality, including training, qualification and expertise, is important as well. Therefore, the study analyses the human potential quality in tourism industry, and assesses its impact on the service quality related to accommodation, catering, transport, organization and provision of sports, cultural and sightseeing events.

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1. Introduction and purpose of the study

Tourism, primarily in industrialized countries, has been one of the key manufacturing industries, no-

tably contributing to the Gross Domestic Product (GDP), offering relatively attractive employment options and reaching a substantial proportion within the employment structure.

The main factors of production in tourism industry are primarily natural and geographic factors, historical and cultural sights, getting the attention and interest of tourists (Houška, 2007; Nejd, 2010). In this regard, the so called infrastructure, including transportation, accommodation, dining and/or sporting possibilities, is becoming decisive. No natural wonder or geographical attraction can attract tourists on a permanent basis. If, for instance, tourists are interested in seeing mountains, they are most probably to exert physical energy, and their remaining time is to be spent resting with the use of adequate services. Therefore, while visiting tourist attractions, not only satisfying basic human needs is necessary but also providing services related to resting.

While factors related to geography are, for the time being and to a certain degree, an objectively unchangeable variable not dependent on human activities (Štětina, 2002), the range and quality of services as well as infrastructure in tourism industry do depend on human behaviour, opinions, education, qualification or experience. Despite this, the main attention is paid to technical and organizational elements of infrastructure and quality of accommodation, dining facilities and transportation services (Burešová, 2007; Burešová, Zimáková, 2008; Houška, 2007; Štětina, 2002; Zurynek et al., 2008). In relation to them, organizational and managing aspects of tourism industry are analysed and researched (Beránek, Kotek, 2003; Indrová, 1996; Minář, Zelenka, 2007; Nejd, 2010; Sysel, 2008). The most careful attention is paid to various marketing aspects and strategies in tourism industry or its branches (Jakubíková, 2009; Királová, 2002; Minář, Zelenka, 2007; Palatková, 2006; SARIO). Analyses also focus on general issues in the development of tourism industry in terms of putting institutional components of the European Union into effect and in terms of integration and formation of the European market of the travel products (Borovský et al., 2008; Carreté et al., 2006; Novacká, 2010).

It is beyond doubt that the range of investments in tourism industry and tourism-related facilities affects the overall performance and effectiveness of the industry and contributes to the enhancement of infrastructure and quality of lodging, dining and other facilities (Borovský et al., 2008; Foret, Foret, 2001; Hriesková, 2011). Similarly, taxes on tourism-related services have an impact on its development

(Hnátek, 2009). However, quantitative and primarily qualitative aspects of staff working in tourism have not been perceived as a unique and significant factor which, in connection with the geographic one, form not only the essence of tourism industry but also noticeably contribute both to the GDP development in this specific industry and to employment. Likewise, natural, historic and cultural values as well as tourism-related services are not a mass product purchasable in a supermarket located in just any place in the world. Services intended for immediate consumption are not transferable in time or place. Their value does not cover primarily the material goods (for instance, groceries to prepare food) but the way they will be processed and offered by staff at the time of serving the meal prepared – their abilities, qualification, mood, and so on. Most tourism-related services are provided by people, and their main value is created by technical, social and psychological qualities, skills and expertise.

These skills and knowledge get expanded through cooperation with people inside and outside the organization, as well as through transfer of expertise and experience (relational capital) in order to build institutionalized knowledge of an organization, i.e. organizational capital. Therefore, we can conclude that the value is not formed by material goods and tourism-based facilities, but by the skills, knowledge and abilities of individual employees. Hence, it is critical to focus on the improvement of and care for single types of human capital represented by individuals in order to create and retain qualified, loyal and committed employees. Investing in human capital brings about improvement of performance, flexibility, and productivity, and enhances the ability to innovate, which naturally follows from continuous enhancement of qualification as well as skills and expertise of staff.

“Staff working in tourism industry” are defined as those who get in contact with customers on both regular and irregular basis, either in primary or secondary manner (Gučík et al., 2006). The relationship between entrepreneurs and staff (guides, staff working in lodging facilities, exchange offices and/or travel agencies, taxi drivers, bus drivers, airline employees, animators, etc.) involved in supplying tourism-related services and getting in personal contact with tourists is of primary importance.

Expertise, qualification and other soft skills, such as, for instance, language skills, sympathy, assertiveness, are essential for visitors to form their opinions experiences. Excellent assertive and emotional communication skills along with sound technical and foreign language skills affect in a positive way the guests' mood and their perception of a given geographic environment and its features. Therefore, it is essential to select and recruit competent and qualified staff.

The goal of this study is to analyse the quality of human potential and identify its impact on tourism development in the Nitra region, Slovakia. Since the value of geography-related factors is determined by nature or history, and little influenced by current activities by people, then human capital value is enhanced by current activities associated with qualification, expertise, experience, upbringing and so on. Geography-related factors alone are insufficient for the development of tourism. For instance, when we compare the geographic environment of Slovakia and Austria, we find that some naturally affluent Slovak locations are more attractive than the locations in Austria with almost identical historic and cultural values. It is a well known fact that tourism in Slovakia is lagging behind. The reasons include not only high quality amenities but, in particular, high quality staff and investments made to their development. Therefore, the study aims to perform a qualitative factor analysis of the staff working in tourism, and assess their impact on service quality and customer satisfaction.

We used several research methods, such as theoretical analysis and provision of justifications for the importance of human potential in the development of tourism industry; empirical research of qualitative characteristics of staff working in the tourism industry in Nitra region; quantitative and qualitative analyses of service quality and customer satisfaction and statistical methods.

The scientific originality of the paper lies in defining the importance of qualitative properties in service quality; identifying the impact of staff qualitative properties on customer satisfaction; and providing justification for the high priority given to staff qualitative properties in the development of tourism industry.

The practical significance of the paper lies in the fact that the results can be used for the creation and implementation of specific principles and measures

of the state policy in tourism industry; regularities and correlations between staff quality and service quality in tourism industry can be used by organization management to enhance strategies related to selection, recruitment, corporate training and development of staff working in tourism industry.

2. Results

Slovakia, a country rich in natural beauty, is known for interesting, yet distinct geographic locations featuring traditional crafts, indigenous products, unique culture, customs and traditions. Therefore, we can conclude that the development of tourism and related services in Slovakia could contribute to economic development and employment as is the case, for instance, in Austria. It is a well known fact that the amount of investments is a key factor for the development of tourism (Čuka, 2011). Scientific literature mostly underscores the investments into lodging, sporting, recreational or transport facilities related to tourism industry (Foret, Foret, 2001; Hnátek, 2009; Zurynek et al., 2008). Yet, it is clearly and fully known that quality amenities having staff without qualification or expertise are of no value for tourists. Tourism infrastructure value is primarily made up of staff – their special skills and knowledge, working attitude, values, willingness to help, etc.

Forming the quality of human potential starts with the system of vocational education. The documents of the Ministry of Education show that there are approximately 563 secondary state schools in the Slovak Republic. We have found that out of this number, there are 83 (14%) secondary vocational schools with specialisation in tourism and that most of them are located in the Nitra region. Full secondary education is provided by Grammar Schools (Gymnasiums) which prepare students for the university, and students can choose out of a variety of fields focused on tourism. We have found out that there are approximately 158 Grammar Schools (Gymnasiums). In Slovakia, there are four institutions of higher education offering study programs in tourism – University of Prešov, Constantine the Philosopher University in Nitra, Matej Bel University in Banská Bystrica and University of Economics in Bratislava (compare Fig. 1).

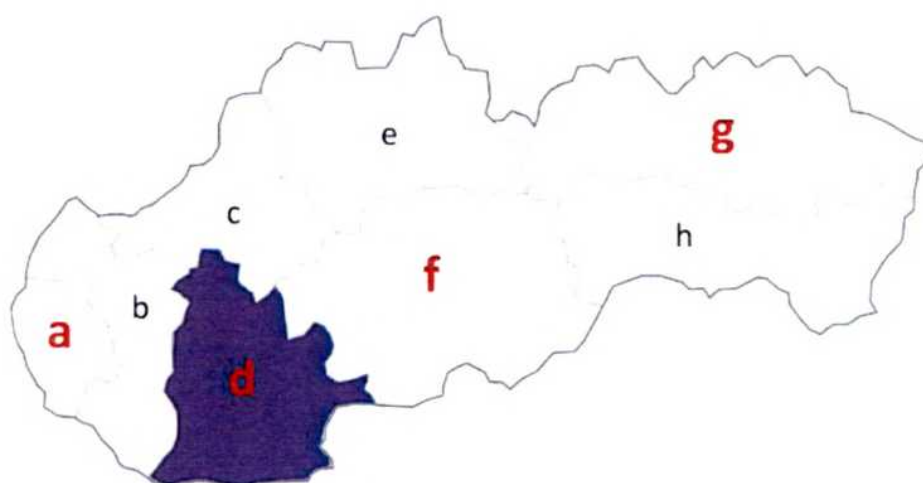


Fig. 1. Institutions of higher education offering study programs in tourism in Slovakia

Explanation: institutions of higher education offering study programs in tourism are marked red; a) Bratislava region, b) Trnava region, c) Trenčín region, d) Nitra region, e) Žilina region, f) Banská Bystrica region, g) Prešov region, h) Košice region

Source: Elaborated by authors based on the data from the Slovak Ministry of Education

Compared to the Czech Republic, there is a small number of institutions of higher education offering study programs in tourism in Slovakia, and the fact is clearly reflected in the quality of serv-

ices provided. There are six institutions of higher education offering study programs in tourism in the city of Prague, and additional nine in other regions of the Czech Republic (compare Fig. 2).

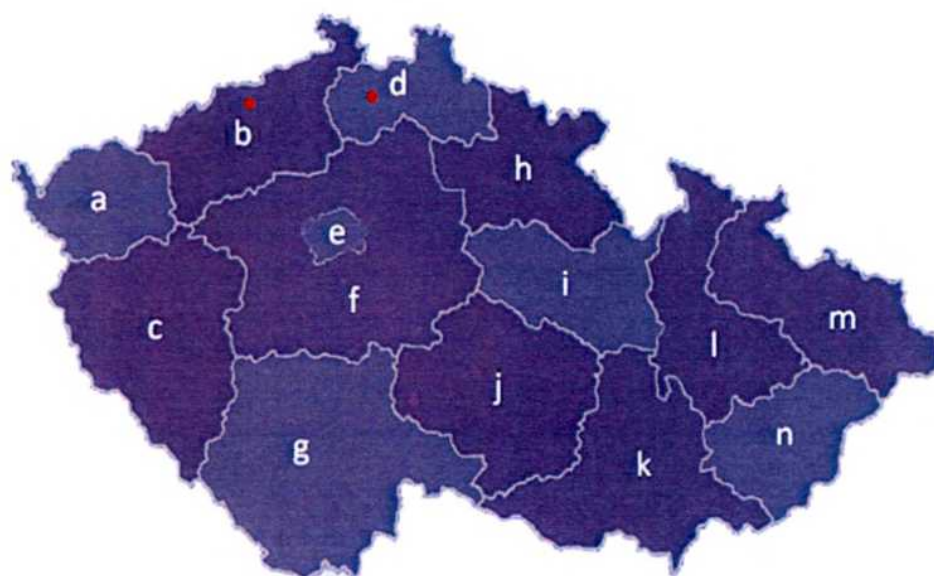


Fig. 2. Institutions of higher education offering study programs in tourism in the Czech Republic

Explanation: the number of institutions of higher education offering study programs in tourism are marked with red dots; a) Karlovy Vary Region, b) Ústí nad Labem Region, c) Plzeň Region, d) Liberec Region, e) the city of Prague – f) Central Bohemian Region, g) South Bohemian Region, h) Hradec Králové Region, i) Pardubice Region, j) Vysočina Region, k) South Moravian Region, l) Olomouc Region, m) Moravian-Silesian Region, n) Zlín Region

Source: Elaborated by authors

Additional data used in our study are the results of the research conducted in March 2009. The purpose of our research was to assess the qualification level of staff working in the dining and lodging facilities in the Nitra region. In addition, we aimed to assess customer satisfaction with the services provided. We developed two questionnaires – one to be filled by staff working in lodging and dining facilities located in the Nitra region, and the other to be filled by their customers.

The first survey was conducted with staff working in dining and lodging facilities, including technical and managerial staff in the Nitra region. The sample size was more than 100 respondents. The first four questions were to obtain demographic characteristics, such as sex, age, job title and qualification. 45 males and 62 females participated in the survey. 16.7% of respondents were in the 18–34 age group, 36.6% were in the 35–44 age group, 6.7% of respondents were in the 45–54 age group and 16.7% were in the 55–62 age group.

13% of respondents held managerial positions, 7% of respondents had administrative posts, 10% had technical posts, 40% of respondents held positions related to lodging, and 30% of respondents held restaurant-related positions. Regarding qualification, 53% of respondents working in lodging and dining facilities had full secondary education, 17% had elementary education, 20% had higher secondary, and a mere 10% of subjects had a full univer-

sity qualification in the respective field. In Slovakia, there is a small number of colleges and universities offering study programs in tourism. Compared to the Czech Republic, there are almost one quarter fewer colleges and universities offering study programs in tourism in Slovakia. There is a lack of university educated staff in the Slovak hotel industry which has an adverse effect on the development of tourism in Slovakia.

The research results demonstrate that the staff working in lodging and dining facilities are under-qualified to perform their duties. Out of all respondents, 46.62% are under-qualified. It is apparent that a large number of hospitality facilities fail education and training to provide for their staff, and the remaining 43.33% are not willing to participate in further education and training. Since staff are not willing to improve their skills, major deficiencies in service quality occur. However, 66.6% of staff are satisfied with the quality of service they provide to their guests.

Guest satisfaction is crucial for the development of tourism industry. In our research, we also assessed guest satisfaction with the hotel accommodation and dining services in the Nitra region. More than 100 guests, 64 females and 48 males, filled out the guest satisfaction questionnaire. The age of survey respondents was 18–62 years. We found that almost 70% of respondents are not happy with or have objections to hotel accommodation (compare Fig. 3).

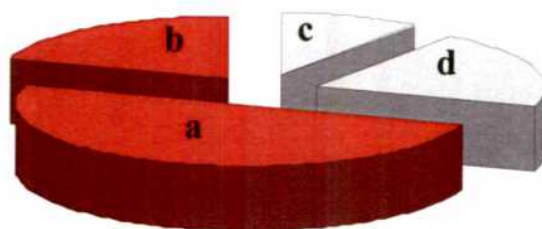


Fig. 3. Guest satisfaction with accommodation

Explanation: accommodation-related services were of excellent quality: a) strongly disagree, b) disagree, c) strongly agree, d) agree

Source: Elaborated by authors

Nearly 77% of subjects are not satisfied with the quality of dining services. The research results indicate that more than 53% of the respondents would not stay in the same hotel again. Major deficiencies

include not very clean rooms, impolite staff unwilling to help, obsolete amenities, and language barrier. Except for obsolete amenities, all the remaining deficiencies are directly related to staff behaviour

and competences. It implies that majority of complaints address the quality of work performed by not only individuals but also teams, including managerial staff.

Regarding dining services, only 3.3% of respondents were satisfied with the service, which is an extremely low number. 20% agree they received quality service, 63% of respondents disagree, and 1.3% strongly disagree they received quality service. Major deficiencies listed by clients include unwilling to help staff, obsolete amenities, dirty dishes, food not warm enough and too long meal preparation.

Generally, more than half of surveyed guests gave a negative assessment of the quality of services provided. It is critical for the Slovak hospitality industry to be prepared for providing services to foreign customers in order to flourish. Hospitality staff should have a good command of foreign languages. Nearly 67% of respondents encountered language barriers. It follows that the staff are not prepared to provide services to foreign visitors to Slovakia in a suitable manner. Consequently, visitors to Slovakia do not have a high opinion about the services provided to them. Undoubtedly, poor quality of services hampers the development of tourism.

The results indicate that staff members behave in an inappropriate manner towards clients. It was found that 73% of respondents did not find the staff behaving in a courteous manner, and 75% of respondents did not find their complaints and requests resolved fast and flexibly enough.

According to a survey by the Slovak Investment and Trade Development Agency (SARIO) there is a developed competitive environment made up largely of small economically weak enterprises providing primarily accommodation and catering services (SARIO, 2013). Larger companies that would start business in Slovakia and fulfil the role of a market leader in terms of the quality and innovation of services, or in improving the country's image abroad, disturb organizational, legislative, personal as well as psychological qualities of staff working in tourism industry. Even though the survey was performed in 2006, their findings still apply – as confirmed by the data from the Statistical Office of the Slovak Republic (Štatistický úrad SR, 2013). In addition, the tourism industry in Slovakia has been negatively affected by economic crisis.

In late September 2012, 321 accommodation facilities provided their services in the Nitra region. Compared to late September 2011, the number of accommodated guests decreased by 4.1%, the number of foreign guests decreased by 6.3%. The number of tourists accommodated in the region represented 5.9% of the total number of tourists coming to Slovakia. The average price for accommodation in the region was on average EUR 0.38 higher than the average price in Slovakia.

Low quality of tourism-related services can also be attributed to wages. In 2012, the average monthly wage in the sector of accommodation was EUR 577, and in the sector of dining and catering EUR 370, while in the sector of industry it was EUR 842, in the sector of gas and electricity it was EUR 1,302, in the sector of information and telecommunication technologies EUR 1,645. It follows that wages in tourism industry have considerably fallen behind the average wage of EUR 800 in Slovakia.

Therefore, it has to be underscored that not only findings of our survey but also data by the Slovak Investment and Trade Development Agency (SARIO) and Statistical Office show that problems related to the development of tourism both in the Nitra region and the Slovak Republic are primarily associated with the human factor quality and service quality. Human factor is vital for ensuring service quality in all areas of tourism industry.

3. Conclusions

Service quality is the ability of service providers to produce the necessary output at a specified level for customers and according to their expectations. Tourism-related services are rated too low by respondents in the Nitra region, and it can be assumed that services of similar quality are provided in the remaining Slovak regions.

The survey findings imply that the key problem in the development of tourism both in the Nitra region and Slovakia is staff lacking proper or required qualification, and management not interested in developing their staff. An overwhelming majority of subjects point to the lack of career prospects, insufficient remuneration, no regular trainings or lack of high quality ingredients to prepare meals, etc.

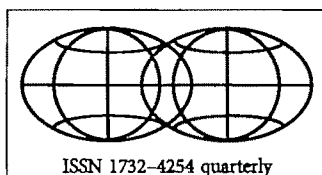
It goes without saying that Slovak tourism industry needs qualified staff to thrive. The survey findings identified major deficiencies in dining and lodging-related service quality in the Nitra region.

We maintain that insufficient tourism-related service quality in the Nitra region can largely be attributed to the lack of universities providing study programs in tourism. The quality of tourism-related services provided in Slovakia does not reach the level of services demanded by visitors coming from Western European countries. Achieving the desired quality of service would attract more visitors to come to Slovakia, which in turn would contribute to the development of tourism. Staff qualification plays a crucial role in tourism industry in the Nitra region. The subjects for this investigation found major deficiencies in lodging and dining services in the Nitra region. Since guest satisfaction is of prime concern in tourism industry, continual enhancement of staff professionalism is a must.

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Globalisation as a major factor modifying the patterns of tourism activity

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Abstract. Globalisation is a complex and dynamic process that today influences many factors determining the development of tourism. It brings about economic, political, social and even cultural changes and drives the expansion of a single global market where the movement of capital, goods and people is much easier than it used to be. Globalization also has an intangible dimension – by enabling access to information and modern forms of communication and by stimulating the spatial mobility of populations it allows ideas to flow freely, as a result of which individuals learn new attitudes and behaviours. This article discusses the influence of globalization on the tourism preferences and tourism activity of Polish residents. The results of the earlier empirical research has confirmed that different social groups have their specific models of tourism activity, showing also which groups have responded to globalization the most strongly and the possible consequences this may have for tourism activity.

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1. Introduction

Many contemporary determinants in the development of tourism have their source in globalization processes and can be considered within the economic, political, social and cultural dimensions of the processes. Being a very important component of today's global economy, tourism has attracted the attention of many researchers who, particularly, seek to establish the economic dependence between tourism and the worldwide and regional globalization processes. While fully appreciating the scientific achievements in this area, the authors of this paper have decided to investigate how globalization affects the tourism preferences and purchasing decisions of individuals relative to their tourism activity. Globalization changes economic, social and political systems, as well as culture all over the world, having also effect on individuals (Bauman, 1999; Golka, 1999). This article aims to determine its bearing on the tourism preferences of Polish residents and the profiles of their tourism activity (with respect to socio-demographic characteristics).

One of the hallmarks of globalization is increasing spatial mobility of people combined with rising numbers of outbound trips (Burns, Novelli, 2008). The reasons for people to travel abroad more often are gradually increasing integration and cooperation in the world economy and more frequent business contacts, but also their wish to see new places. The frequency of trips increases together with travelled distances, mainly because of the development of telecommunications and the means of transport (Wahab, Cooper, 2001). In a world where airlines reduce air fares, travelling times are shorter and shorter, the developed societies become increasingly wealthy and information is easily accessible, outbound trips are perceived more and more often as an achievable alternative to domestic travelling.

The description of factors that make outbound tourism trips increasingly popular in Poland would not be complete if the unique character of tourism in the former socialist countries was omitted. Two historical circumstances seem particularly important: the economic and political barriers that largely prevented the outbound movement of people and restricted range of legitimate destinations (outbound tourism actually limited to the CEE countries). The collapse of the communist bloc, the

removal of political barriers and less burdensome formalities at the borders have all added to higher intensity of outbound tourism.

Accordingly, it was assumed that also Poles choose to travel abroad more often and that the better affordability of air tickets increase the frequency of tourist trips and make distant destinations more available (as time and space undergo compression). Another assumption was that particular social groups have different opportunities to travel abroad (particularly to destinations that are more remote). As outbound trips are associated with financial, administrative, legal and mental barriers and many skills are needed to overcome them, outbound trips are presumably more likely to occur among young people, who are economically active and educated. The youth can be expected to be more active as travellers. Because of their knowledge of foreign languages, modern technical devices and IT systems, they perceive outbound trips as quite a normal thing and travel even if they are short on funds. It was assumed that the respondents in this age group would be the boldest in responding to questions about their preferred destinations. Because of a whole range of interrelated determinants (from financial to psychological), the older population should travel abroad much less frequently, focusing their trips on a smaller geographical area.

The survey had two questions to test the assumption about the spatial reach of outbound trips (actual and planned). One question asked about the names of the countries the respondents had already been to and the other one concerned the destinations they would like to see. Assuming that people travel abroad as tourists to fulfil their dreams, it is quite probable that a desire to see a place that one perceives as exceptionally attractive will be fulfilled at some time in the future. The preferred destination also indirectly shows how far the respondent would be ready to travel from his or her place of residence.

Outbound trips are as much driven by globalization as driving it. Migrating populations take with them their incomes as well as tangible and intangible values to other regions of the world (Bauman, 2011). Moreover, individuals disseminate and absorb new cultural models (Burns, Novelli, 2006; Hall, Lew, 2009: 141–185). The processes largely depend on tourists' attitudes to the places they

visit. This aspect has been more broadly discussed by M. Alvarez and G. Asugman (2006), who developed two models of tourists called *explorers* and *planners*. The division of tourists into *importers of culture* and *exporters of culture*, dramatically different in their absorption of local cultural values, that A. Dłużewska (2009) has put forward appears to be even more adequate.

The above context attracts attention to the wider issue of tourist movement to culturally dissimilar areas, where the accumulation of phenomena attributable to both positive and negative consequences of globalisation can be observed (Dłużewska, 2009). The issue seems extremely important from the perspective of outbound tourism in Poland, considering that the Islamic countries (Egypt, Tunisia and Turkey) have become the most popular destinations among Polish tourists in the last several years. Because the rise in their popularity is mainly caused by non-cultural considerations, such as recreational values, spatial accessibility and attractive (low) prices, the mass inflow of tourists shows many dysfunctions arising from the dissimilarity and unfamiliarity of culture in the visited countries.

Globalization undeniably makes individuals more demanding of the quality of tourism services that determines the degree to which tourists' expectations will be met. Therefore, quality guides their purchasing decisions. The expectations increase when people become more aware and due to the tough competition in the tourist market that extends the range of tourism services offered at comparable prices. It is a reflection of global cultural, social and economic changes (Middleton et al., 2009).

The globalization of ideas improves also the environmental awareness and promotes the concept of sustainable development (Hall, Lew, 1998). The scale of harmful and irreversible changes to the environment that result from human activity is a source of anxiety all over the world. The situation calls for seeking ways that will restore balance between what people need and the environment. The tourism industry also pays attention to the concept of sustainable development. Its awareness of the risks associated with a too heavy traffic of tourists makes the industry more determined to ensure symmetry between tourists' needs, the environment and local communities (Wahab, Pigram, 1997).

As a result of the environmental awareness new forms of tourism are developed, such as alternative tourism that is utterly different from mass tourism. Alternative tourism gives a completely new meaning to travelling and the use of leisure time. It directs tourists' attention to new destinations and even if it cannot be expected to gradually decrease the spatial and temporal concentration of tourists, it can at least partially delay its development in the most popular regions. The trend is supported by the increasing variety of individuals' needs and motivations for travelling (Middleton et al., 2009). As new trends in tourism are also expected to develop in Poland, this research used the characteristics of domestic tourism activity to see which megatrends occurring in world tourism are present in Poland.

Another manifestation of globalization that significantly affects tourism is fashion that makes some tourist regions very popular, although the popularity is frequently transient. Particular social groups may have special reasons for which they find some destinations more attractive than others. These can be prestige, "hot" sports and recreational activities (popularisation of adventure tourism), as well as financial aspects (the perceived service price / quality ratio). Because information both determines and popularizes fashion, young people who have access to information systems and know how to use them are probably the most susceptible to new fashion trends.

In this paper, the tourism preferences of several age groups in Poland and their tourism activity profiles are compared to predict future trends. Although the needs and motivations for travelling change in a natural way (together with changing social roles, etc.), some attitudes and behaviours that young people develop survive into adulthood. This means that by analysing the characteristics of tourism activity of particular generations it can be established which of the characteristics people consider important and which are likely to become even more significant in the future.

2. Methodology

To analyse this above matter and to test the formulated hypotheses, the authors reached for the re-

sults of their own research and for Polish Central Statistical Office (GUS) statistics (module surveys of households on tourism and recreation from the years 2005 and 2009).

Information on the tourism preferences and tourism activity of Polish residents was collected during a questionnaire survey based on paper and pencil interviews (PAPI). The interviews were conducted in several towns of different sizes and in the rural areas of the Kujawsko-pomorskie voivodeship. The purposive non-random sample was assembled to include persons at different ages: secondary school pupils (last years of secondary schools), tertiary students, economically active people, and old age and disability pensioners. The number of questionnaires was assumed to exceed 1,500. The margin of error and confidence levels were assumed to be 5% and 90%, respectively. The questionnaires had a classical structure, most questions were closed-end questions supplemented with a dichotomous nominal scale and a modified Likert scale. The tertiary students and the pupils were provided with a separate questionnaire form with slightly customised questions, but the general rule was that the questions should ensure maximum comparability of results between the groups of respondents. The survey was conducted between April and June 2010. Following verification, 1,440 questionnaires were accepted for further analysis. The database was built using the PASW Statistics package and its contents were processed statistically.

3. Outbound tourism activity of Polish residents

Among the major manifestations of globalization there are increasing spatial mobility of populations and physical distance losing its importance as a factor discouraging people from travelling. They boost tourism activity and make outbound trips more frequent. This means that in order to assess the impact of globalisation on the tourism behaviour of Polish residents their propensity to travel abroad must be examined.

Almost 26% of over 1,440 respondents covered by the survey stated that they „participate in outbound tourism”.

To find out how popular outbound trips are in Poland, the Social Surveys and Living Conditions Department of the Polish Central Statistical Office (GUS) conducts a periodic survey called „Turystyka i wypoczynek gospodarstw domowych” (Tourism and recreation in households – in Polish). The most recent survey conducted between 1 Oct. 2008 and 30 Sept. 2009 (for the sake of simplification the period will be hereafter called “the year 2009”) showed 12.2% of households to have travelled abroad. Compared with the 2005 survey, the percentage of households taking leisure trips increased from 52.7% to 55.8%, with the rate of those going abroad for two days or longer increasing from 9.5% to 12.2%. The outcomes of the survey conducted by the authors and of the GUS survey differ because GUS records outbound trips taken within a specific period (12 months). In the presented research, less frequent trips were also considered.

Numerous observations (cf. Alejski, 2009) indicate that social groups differ in their use of tourism opportunities, particularly regarding outbound trips. Important factors that cause the differences are age, educational attainment and the level of incomes.

The survey conducted by the authors supported the observations. Respondents at mobile working age travelled abroad the most frequently (over 34% in the age group 18–44 years), then people at non-mobile working age (45–60/65 years; 30%), secondary school students (27%) and tertiary students (21%). Outbound tourism was the least frequent among seniors – only 6% travelled abroad for sightseeing purposes. The frequency analysis of outbound trips showed that the proportion of those who really travelled abroad (although with frequencies ranging from „once every several years” to „several times a year”) was much larger than reported by the respondents, because many of them understood „outbound tourism” very narrowly and omitted trips taken to meet family members or friends, or business trips. It is also possible that their self-perception as outbound tourists was somewhat subjective.

GUS statistics point out that there is a relationship between person's age and their participation in outbound tourism (Fig. 1). The most frequent outbound tourists are people aged 25–44 years and 20–24 years (ca. 9.5% in each of the popula-

tions), and then people at non-mobile working age (over 8%), school-age youth and children. Out-

bound trips are definitely the least popular among seniors.

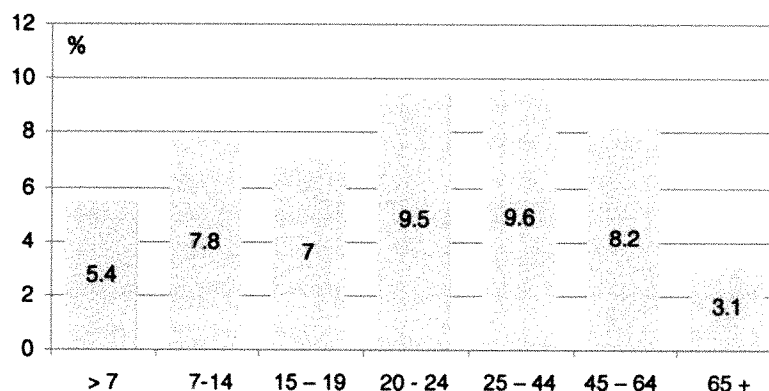


Fig. 1. Outbound tourist trips of Polish residents by age (%)

Source: Turystyka i wypoczynek w gospodarstwach domowych w 2009 r. (Tourism and recreation in households in 2009 – in Polish), Informacje i opracowania statystyczne, GUS, Warszawa 2010

The level of education is believed to be an important factor determining tourism activity, including people's propensity to travel abroad. This research has confirmed the opinion. Compared with almost 40% of respondents with tertiary education that participated in outbound tourism, among people with secondary education the rate was ca. 24% and only 10% for respondents with basic vocational education.

The GUS statistics generated from the household survey show the differences to be even greater. According to the GUS data, in the group of people with tertiary education more than 21% travelled abroad as tourists in 2009, a rate that is twice as big as that for people with secondary and post-secondary education (9%). In the groups of people with basic vocational education and primary education, and with no education at all, outbound tourists accounted, respectively, for 4.1% and 2.8% (Fig. 2).

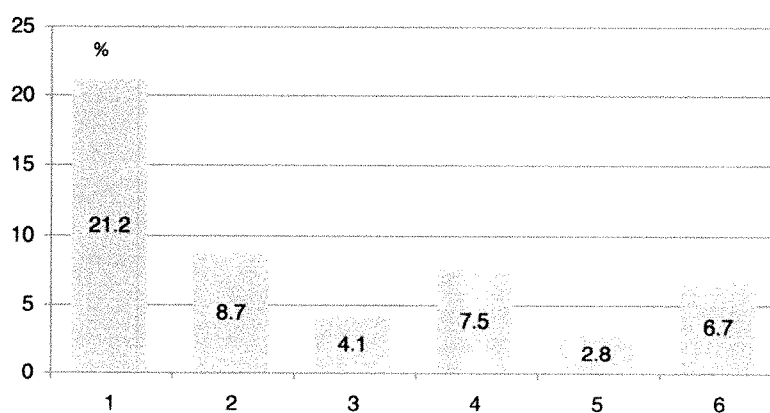


Fig. 2. Outbound tourist trips of Polish residents by educational attainment (%)

Explanation: 1. tertiary, 2. secondary and post-secondary, 3. basic vocational, 4. lower secondary, 5. completed primary education and without education, 6. under 12 years.

Source: Turystyka i wypoczynek w gospodarstwach domowych w 2009 r., (Tourism and recreation in households in 2009 – in Polish), Informacje i opracowania statystyczne, GUS, Warszawa 2010

As regards the duration and frequency of trips, short outbound trips were the most typical of students and economically active people aged 18–44 years (maximum 3-day trips taken several times a year). The other group accounted also for the highest number of short outbound trips taken at low frequency („once every several years”). In the older age groups, the frequency of short outbound trips was clearly lower.

Longer foreign trips, in excess of 4 days, showed a similar pattern. Young people were the most active again. Over 70% of students went abroad at least „once every several years”, with every fourth doing so „once, twice a year”, and ca. 7% „several times a year”. The next age group (economically active people to 44 years) was very similar regarding the proportion of respondents going abroad and

the frequency of trips, but its rate of those who did not travel abroad at all was 35%. The older age groups had markedly greater rates of respondents that did not travel abroad: over 50% in the group at non-mobile working age and more than 86% in the group of seniors aged 65+. The percentage of respondents who frequently travelled abroad (several times a year) was also found to decrease with age.

The collected data point to a relationship between the financial status of households and their tourism activity. In 2009, every-fifth household with per-capita income in excess of 1,600 PLN participated in an outbound trip taken for leisure purposes. This percentage declines with falling family incomes, amounting to less than 2% in the lowest-earning households (Fig. 3).

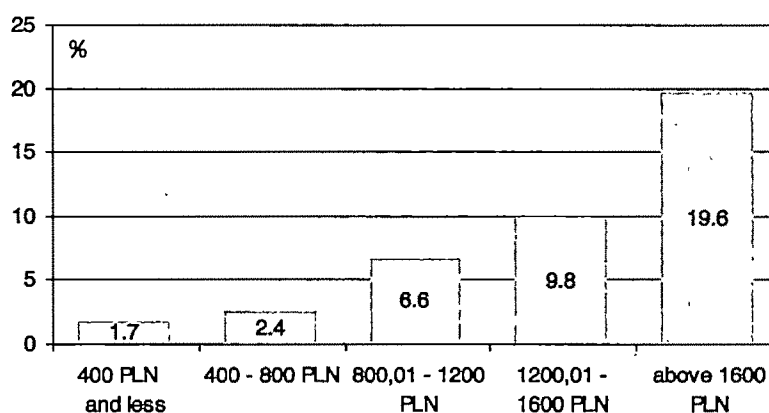


Fig. 3. Outbound tourist trips of Polish residents by household per-capita incomes (%)

Source: Turystyka i wypoczynek w gospodarstwach domowych w 2009 r. (Tourism and recreation in households in 2009 – in Polish), Informacje i opracowania statystyczne, GUS, Warszawa 2010

4. The spatial reach of outbound tourism trips and destinations preferred for the future

The destinations of tourism trips, both past and preferred for the future, were also investigated during the research. To this end, the respondents were asked questions about countries they had already visited and those they would like to see in the future. To answers were assorted according to three

categories of countries: 1. countries adjacent to Poland; 2. the European and Mediterranean countries; 3. non-European countries.

The answers showed that most respondents had already travelled abroad (although some of them did not consider their trips „outbound tourism”; see above). The numbers of countries that the respondents had visited and their geographical locations were very different. The most active travellers were people in the younger age groups, as almost 80% of those who had already travelled abroad were secondary school pupils, tertiary students and eco-

nomically active people (to 44 years). At the same time, they differed considerably in the distances they had travelled. Compared with young people who more frequently visited countries lying close to Poland, the older age groups had larger proportions of persons choosing distant destinations. The distance of the trip was strongly correlated with tour-

ist's incomes. In the next age groups (economically active people aged 45–60/65 years and people older than 60/65 years), the percentages of respondents who never travelled abroad were clearly higher (38 and 53%, respectively). Moreover, the proportions of respondents travelling long distances decreased with age (Fig. 4).

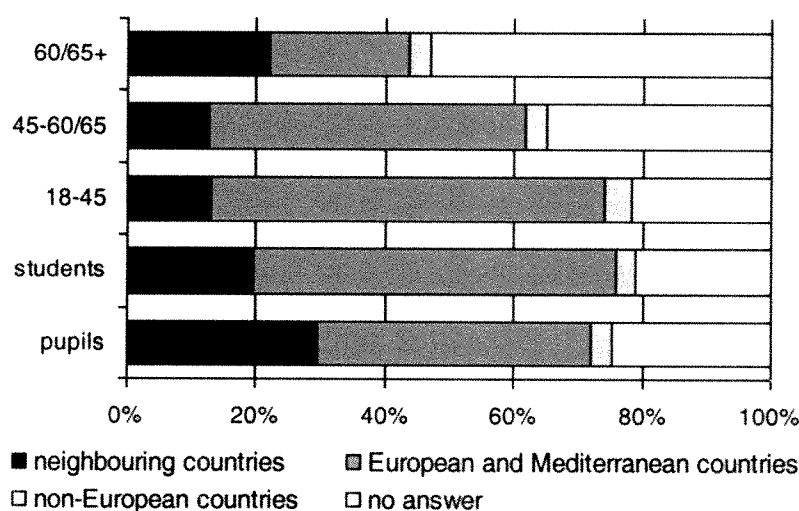


Fig. 4. The destinations of outbound trips of Polish tourists by age

Source: developed from fieldwork data

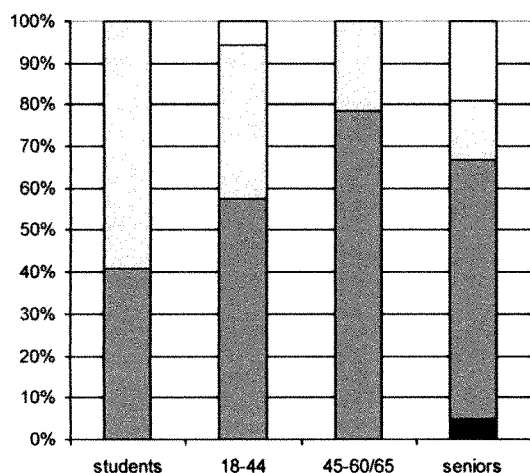
In order to establish whether the expanding globalization has an effect on the destinations tourists would choose, the respondents were asked to indicate the places they would like to see in the future. Additionally, particular age groups were compared for destinations they had already visited. The countries the respondents liked were classified using the geographical criteria presented above. The results showed that young, well-educated people in a good financial situation preferred the most distant destinations. Even a cursory analysis of the data reveals that people who have travelled before are more willing to see new places, because unknown, frequently distant regions of the world are perceived then as less risky. This finding is additionally supported by the reach of destinations that the respondents would like to see in the future: in over 90% of cases the destinations were more distant than those already visited. The students chose the non-European countries the most frequently. The percentage of respondents wishing to see more distant places than they had already

visited was found to decrease with age. As expected, seniors were the most cautious in this respect (Fig. 5A, B, C, D).

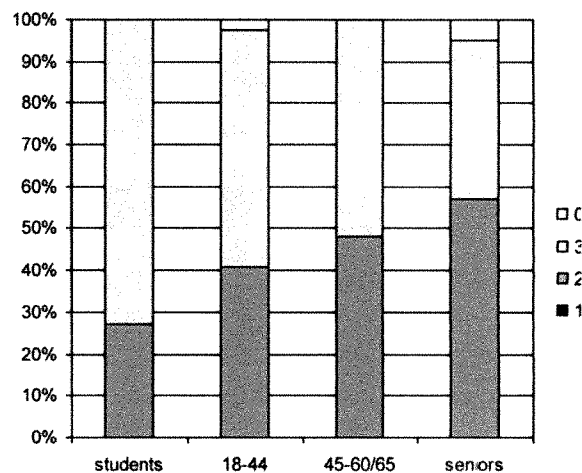
Interesting answers were given by respondents who had not travelled abroad when they were asked to choose their best foreign destinations for the future (Fig. 5D). The non-European destinations were chosen the most frequently by the youngest age group (45%). In the older age groups, i.e. 18–44 years, 45–60/65 years and older than 60/65 years, the same destinations were indicated by respectively, 33%, 18% and 14%. The rates of respondents who had problems picking a place they would like to see in the future were the larger the older the age group, i.e. ca. 17% for secondary school pupils, ca. 20% for economically active people (aged 18–44 years), over 32% for respondents at non-mobile working age (45–60/65 years) and almost 40% in the oldest age group. Respondents' problems with answering the question were apparently connected with a lack of sufficiently strong motivations for travelling. The differences identified between the age groups seem

to indicate that the groups differ in their perception of problems related to leisure travelling, and that the

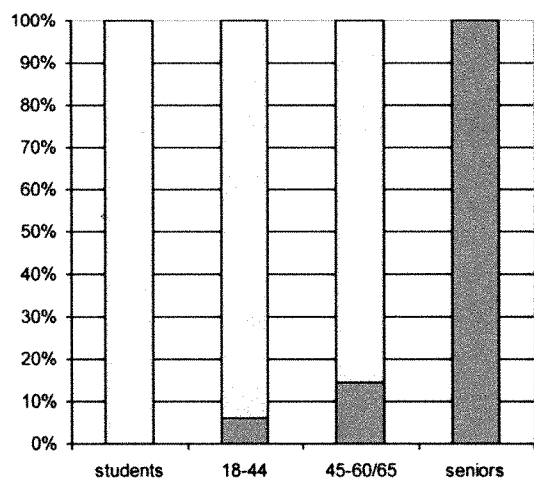
mature/older people and young people have different skills and determination to solve them.



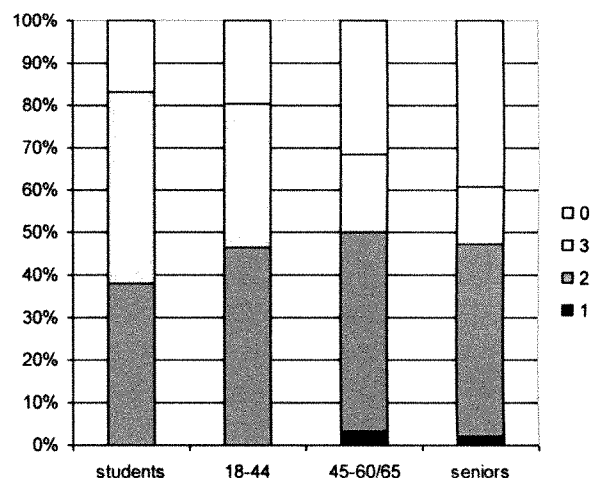
A people who have travelled to countries neighbouring to Poland



B people who have travelled to European and Mediterranean countries



C people who have travelled to non-European countries



D people who have not travelled abroad so far

Fig. 5. Preferred destinations by respondent's experience of outbound trips

Explanation: 1 – Neighbouring countries; 2 – European and Mediterranean countries; 3 – non-European countries; 0 – no answer

Source: developed from fieldwork data

Overall, the conclusion the study has provided is that past experiences encourage people to see new countries or regions. This finding holds true for all age categories, but the proportion of persons who choose a global reach of their future destinations is always greater in the youngest age group and declines with age. It is interestingly to note that young people do not think that a lack of experience

might be a major problem in their future activity as tourists. One reason of this optimism, supported by the survey results, may be their unawareness of all problems involved in outbound trips, particularly to more distant destinations. Regardless of where the optimism comes from, it shows that people have positive attitudes to outbound tourism and this may drive its future development.

5. New trends in Polish tourists' choices

One of the assumptions made in the research was that new trends in tourism may be an indication of changing patterns of tourist behaviour and, indirectly, of the influence of globalization.

To analyse the tourism activity of Polish population, the respondents were asked the following question „Do you like to travel for leisure purposes?” The majority of the respondents gave affirmative answers, but the distribution of the answers varied among groups. Most ‘yes’ answers were given by tertiary students (93%), economically active people aged 18–44 years (91%), and secondary school pupils (88%). The percentage of the answers was found to decrease with respondents' age (only 67% of seniors “liked” to travel). When the liking for travelling was investigated from a practical perspective, the respondents turned out to be less active tourists than they declared. The rate of tourism trips that were actually taken was the greatest among students (88%). In the other groups the rate was 75% (secondary school students), 77.4% (economically active people aged 18–44 years), 66.4% (people aged 45–60/65 years) and only 46% for seniors. A worth noting fact is the difference between respondents with a positive attitude to tourism („I like to travel”) and those who actually travelled. The difference was the smallest among tertiary students (5 percentage points). For secondary-school pupils and the economically active aged 18–44 years it was around 13–14 p.p. and among seniors as much as 21 p.p. This finding confirms that the number of constraints increases with age and that people in older age groups are less determined to overcome the arising obstacles.

The purpose of the next question was to establish the forms of tourism the respondents liked. According to their answers, recreational tourism was the most popular in all age groups. It was chosen by almost 80% of young people, over 70% of the economically active and by 60% of respondents in the oldest age group. Heritage tourism ranked right below, but the interest in this form of tourism clearly declined with age. Heritage tourism was indicated the most frequently by students (62%), then by economically active people at mobile working age (ca. 50%) and by secondary school pupils (44%). In the

group at non-mobile working age it was chosen by 35% of the respondents, but only by 10% of all seniors. The popularity of heritage tourism decreases in older age groups because it involves more arduous touring trips whereas the activity and physical fitness of older people are generally lower.

Other forms of tourism considered in the survey (adventure, medical, and religious tourism, business, agritourism) were chosen much less often. In particular age groups, the rates of respondents that actively practiced them ranged from only several per cent to less than twenty per cent. Respondents' preferences were clearly correlated with their socio-demographic characteristics. For instance, adventure tourism was favoured by young people, both students (11%) and economically active people (7%), whereas older people preferred medical and religious tourism (these forms of tourism accounted for 16% and 13%, respectively). Business trips were specific to the economically active population, but they were taken more often by people at mobile working age (6%) than those at non-mobile working age (2%). Agritourism is convenient solution for families with children (regardless of their age), so it was indicated more frequently by young people and working-age people (at both mobile and non-mobile age).

In analysing the research results two findings are worth stressing. One is that the younger generations are interested in various forms of tourism activity and the other is that the seniors reduce their interest in tourism to several activities. This situation results from the joint operation of many factors determining the overall tourism activity. It may also mean that the modernization and globalization processes increase the diversity of tourists' needs and their motivations for travelling. The processes have stronger effect on the younger generations, which are more impressionable and prone to modify their choices and behaviours.

Why people choose different forms of tourism is determined not only by their age, but also by their educational attainment and the level of income. Because the factors are quite strongly correlated, the distribution of the respective responses was similar: passive recreational tourism was losing its popularity among the respondents in favour of more active forms (heritage tourism, touring trips, etc.) with rising levels of education and incomes. The diversi-

ty of the preferred forms of tourism was increasing according to the same pattern, which means that education makes people more sensitive to modernization and globalization processes.

New trends in tourism have effect on what people need and their motivations, as well as influencing the frequency and duration of trips. According to the hard and soft tourism concept (Krippendorf, 1983), the traditional model with one holiday trip taken during the season will be replaced in the future by a number of shorter trips taken throughout the year. To find out whether this process has already started in Poland, the respondents were asked to state the type of trips they had taken, with their duration and frequency. The answers showed that short trips were much more frequent in the younger groups. The spatial mobility of the students was definitely the highest, as they took trips during the week (after work or school), weekend trips (with or without overnight stay), and trips lasting 1–2 weeks or more. There are two main factors explaining why students can take leisure trips practically at will: one is the considerable amount of free time they have and the other is that they do not have any responsibilities but studying (this observation applies to most students). Tourism activity (frequent trips, particularly during the week, weekend trips involving overnight stay, short trips to 4 days) clearly decreases with age. Compared with the groups of tertiary students and secondary school pupil where on average of every third respondent took a weekend trip with overnight stay, in the group of seniors the rate was only 5%. The differences are less marked when weekend trips without overnight stay are considered (these were indicated by 22–24% of respondents in the younger age groups and by 18% of seniors), which implies that the tourism activity of older persons is affected not only by their health, the possession of a car, etc., but also by their financial status.

The long trips present a somewhat different picture. The rates of respondents taking trips of 1–2 weeks are similar between the youth (secondary school pupils and students) and economically active people to 44 years (mainly families with children). The percentages of longer trips are greater among the youth and seniors. In the first case, the reason is the parents' wish to let their children have a rest after hard work during the school year. The

second case can be explained by seniors' marked interest in medical tourism (in other respect they are generally less active).

The proportion of short trips in their general structure is clearly correlated with educational attainment and incomes. Short trips are taken by less than 10% of persons with primary education, but the rate rises with the level of education to over 32% in the group of respondents with higher education. The correlation between incomes and the structure of trips is even stronger. The better-off people engage in long leisure trips four times more often than those with the lowest incomes.

An important indication of new trends influencing tourism activity is the way of arranging for a trip. Tourists who have special needs frequently have to make the necessary arrangements by themselves. There is, however, one more important factor that makes individual trips so popular in Poland – low incomes. People in Poland are comparatively less wealthy than western societies and many people cannot afford to buy services in the market. The economic factors still have a significant impact on consumers' purchasing decisions.

The research did not find a clear correlation between the provider of the trip and the age of the tourist. Individually organised trips prevailed in all groups (their rates varied from 70% among economically active people aged 45–60/65 years to over 82% for students). The students and the group at mobile working age (18–44 years) made individual arrangements for their trips slightly more often. Organized tourism was the most frequent among respondents at non-mobile working age. The interpretation of the results is relatively easy considering the earlier characterisation of tourism activity by age group. It shows that how particular groups arrange for their trips is determined by a different set of variables. The diversity of aims and motivations for travelling in the younger age groups implies that they may make travel arrangements by themselves to be sure that their needs will be satisfied. This approach is possible when people have a relatively large amount of free time and know how to find the necessary information. In contrast, people in the oldest age group make travelling arrangements on their own themselves because they lack funds (services provided by travel agents are usually more expensive).

The preference of older, economically active people (aged 45–60/65 years) for organised tourism is related to a greater percentage of outbound trips in their overall structure. The research has shown that domestic trips are organized independently in Poland more often than outbound trips, so the organized forms of tourism may gain in popularity following the development of outbound tourism (for this to happen population incomes must increase). This conclusion is supported by the correlation between the type of the provider and income. Among those with the lowest incomes travel agency services are used by less than 5% of respondents, but in the wealthiest group the rate is almost 40%.

The last variable of effect on tourists' preferences is the tendency to follow fashion. Therefore, the survey sought to identify destinations that Polish tourists liked (by asking the following question: „What tourist destinations do you prefer?: a) fashionable, popular, vibrant, or b) quiet, peaceful, less busy”). The analysis of the responses showed that preferences were markedly age-specific. Younger respondents chose fashionable and popular places the most frequently (58% of secondary school pupils). The rate of respondents who liked such places was decreasing with their age, down to 20% in the group of seniors. This means that the older age groups had larger percentages of those who preferred quiet, peaceful and less popular places.

6. Conclusion

As a complex and dynamic process, globalisation directly or indirectly contributes to the development of tourism in many ways. Bringing about economic, social, political and even cultural changes, globalisation forms a unified global market and considerably facilitates the movement of capital, goods and people. Globalization also has its intangible aspect – by providing access to information and modern forms of communication and by stimulating the spatial mobility of populations it enables a free flow of ideas that show individuals new attitudes and behaviours. The tourism activity of Polish residents is affected by both external and internal factors, but people differently respond to the strength and extent of their impact.

The growing mobility of populations and the resulting development of outbound tourism is one of the major effects of globalization. The research has shown that Poles too decide to travel abroad more and more often. The trend is likely to continue into the future, because younger people are increasingly active in this area. A comparison of the past and preferred destinations of outbound trips has shown that young people, unlike seniors, have fewer problems accepting the compression of time and space.

According to the research results, globalisation has a major effect on the tourism preferences and thereby on the models of tourism activity characterising particular groups of the population. The conclusion that has been drawn from the analysis of the selected characteristics of tourism activity (preferred forms, aims and motivations, the frequency and duration of trips) is that the choices and behaviours of younger people, better educated and earning higher incomes, reflect the majority of new trends.

The research has shown the globalization processes to have the weakest effect on the choices made by the oldest generation of Poles. This group participates in outbound tourism much more rarely than other groups and mostly chooses European destinations. Their preferred future destinations are also limited to their own country or Europe. Another finding that the research has provided is that Polish seniors concentrate on several basic forms of tourism activity and that short trips are not very popular with them. They are quite unlikely to make a purchasing decision because of fashion. Their low incomes are the most important factor constraining their tourism activity.

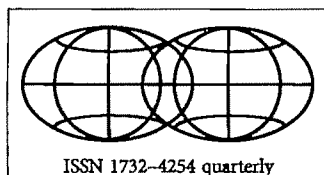
The tourism activity of economically active people shows many more signs of being influenced by globalization (the highest frequency of outbound trips (among all surveyed groups), a relatively high share of individuals choosing adventure tourism, a great diversity of aims and motivations for travelling). In addition to long trips, these people also take short trips (including weekend trips) outside the tourist season. Their interest in fashionable and popular tourist places markedly increases with the level of education and income.

The choices made by the youth reflect most new trends occurring in contemporary tourism. The large variety of their needs and interests significantly widens the range of their aims and mo-

tivations for travelling. As a result, they pursue different forms of active tourism and frequently travel abroad. The youth also absorb fashion trends more easily. For young respondents covered by the survey fashion was one of the major factors in their choice of foreign destinations. Spontaneous decisions are made more easily by people who have a great amount of free time and can use it as they wish. A very important factor enabling young people to be very active tourists is their specific attitude to problems, as well as determination and skills necessary to overcome them.

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Effects of transformations in the urban structure on the quality of life of city residents in the context of recreation

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Abstract. Accumulating over time, spatial transformations in Kraków have been changing the city's structure. The contemporary image of the city is creating a new model of life and has a major effect on the functional and spatial conditions for its residents. Life in the city is dictated by the rhythm of daily routines, and the time of leisure has been reduced to a minimum. Less and less frequently are public and semi-private urban spaces used in the traditional manner and their number is decreasing. A considerable role in the decrease in the space for relaxation in the city is played by the purchasing power of money which is winning for itself the space for new residential estates.

The disappearance of green areas can be best illustrated by the example of the green areas between Kraków and Nowa Huta. Historically, Nowa Huta was set up as an organism separate from Kraków. In 1956, Anna Ptaszycka presented a new plan for Kraków spatial development which curbed industrialisation and promoted Howard's ideas of garden cities. In 1966, the largest park in that area was established, its basic function was to isolate Kraków from Nowa Huta and the steel plant there.

As a result of the projects developed in recent years, the compact greenery is smaller, and more and more areas are being taken over for various projects. Spontaneous development of Kraków, without any master plans, for some small parts of city structure, is a huge threat to the preservation of existing leisure areas. Because of this, precise guidelines are needed for the intended use of areas neighbouring environmentally sensitive grounds, defining their type, scale and impact, in order to protect the landscape attractions which are amongst the desired recreational characteristics.

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1. Introduction

Accumulating over time, spatial transformations in Kraków have been changing the city's structure. The contemporary image of the city is creating a new model of life and has a major effect on the functional and spatial conditions for its residents. As a result of the changing urban functions, a different quality of the city's structure is becoming noticeable. Life in the city is dictated by the rhythm of daily routines, and the time of leisure has been reduced to a minimum. Less and less frequently are public and semi-private urban spaces used in the traditional manner and their number is decreasing. The background for these transformations is complex and they result from the changing realities, the new model of life where leisure time is becoming a marginal portion of existence. A considerable role in the decrease in the space for relaxation in the city is played by the purchasing power of money which is winning for itself the space for new residential estates. The continuous reduction of areas for relaxation for Kraków residents is not counter-balanced, and the new urban structures do not offer proposals for the time of leisure. Because of this, it seems vital to maintain the city areas with traditionally natural attractions in order to balance the growing density of Kraków's structure. Initiated in 1989, the process of systemic changes in Poland resulted not only in essential political changes but also permanent modifications of the structures of many urban complexes which were amongst the first to take in the Western culture. Spatial transformations in Kraków commenced in the 1990s with the first truly avant-garde projects of the time, such as St. Jadwiga's Church (1). One of these changes manifested itself through the increasing number of residential and commercial buildings. The filling-in of areas located at strategic points in the city became a natural consequence of that process.

2. Materials and research methods

The result of the changing functions in the contemporary city is that on today's city map recreational green areas look like randomly scattered spots of parks, green squares and wasteland, which do not make up any system and thus it is hardly possible to refer to leisure zones in the city. Writing about recreation in the city, one cannot fail to mention open areas in its historic part. These include small recreational green areas which, over history, have resisted transformations. The only large green area are the Błonia commons ⁽²⁾ which remain a recreational meadow in the city centre for mass events, with a helipad, and which are used for individual recreation as well.

Kraków residents are offered a wide range of places where they can relax and spend their leisure time (see Ptaszycka, 1950). Busy and tired people like to spend their free time differently and definitely more intensely than several decades ago. The city now proposes many places for recreation and entertainment – cinemas, theatres, museums and, like in any other big city, restaurants, cafes or pubs where people can passively spend their free time with friends. Those who prefer active exercise can use one of the numerous sports facilities, such as swimming pools, aquaparks, gyms, fitness rooms, climbing walls and many other places throughout the city. However, all these are enclosed locations without contact with the surroundings, air and space. Enthusiasts of relaxation in open air have to satisfy themselves with small green areas along water courses ⁽³⁾ which, along some of their sections, have been adapted for recreational purposes – (see Dąbrowski, 1952).

Besides that, the proposal to relax in green areas is limited to several historic parks ⁽⁴⁾ and the Planety green belt in the city centre which, rather naturally, do not offer much by way of free recreation.

In the post-Galician bourgeois tradition of Kraków bordering on prudery, exercise in the open air in urban areas is not a common practice. For similar reasons, parks located within the immediate proximity of residential areas are not used for recreational purposes (except for children). Thus, the offer which would really comprise green areas in which to recreate in Kraków is limited and decreases together with the pressure from developers. There are eight parks with the average area of several hectares each, which are most willingly visited for relaxation purposes (5). An exception in size is Park Lotników Polskich covering almost 600,000 sq. m.

Until recently, most of these green areas were relatively large but, as a result of an increase in the market value of land and the pressure from developers upon the city authorities, they have been transformed in developed areas. This is particularly true for green areas with locations attractive from the perspective of the city's development.

The spatial policy of Kraków should concentrate on improving its urban quality and protecting the city's cultural and natural environment. The actions taken in that regard should emphasize and display the rich and unique structure of the city. The form of urbanized Kraków is constituted by the main city area with compact structure which provides for the basic demands of its residents for urban services. The form of open landscape dominated by areas not to be built-up, constitutes the green belt around the city which forms a wedge entering the city's compact structure and which is most exposed to the risk of slow decay as a result of the transformations in the city's structure.

The Kraków study of the conditions and directions of spatial development proposes, as part of both land development forms, to separate structural entities with varied landscape and functional characteristics. Because of this, the following sections will be identified: city centre structures; high- and medium density residential and commercial areas; university campuses and service facilities which require large plots of land; office and administrative buildings, and technological parks; large-area commercial and shopping centres; large industrial structures, warehouses and wholesale facilities; and urban green areas.

The structure of the open landscape is planned to be outlined more clearly. However, the planned

rate of its increase indicates that, over time, areas intended for urban development will absorb open areas or the latter will be treated as reserves for future development, with traffic routes to be located there since a general rule for the extension of urban development will continue to be the use of new areas for public transport purposes.

The disappearance of green areas can be best illustrated by the example of the green areas between Kraków and Nowa Huta (Fig. 1). Historically, Nowa Huta was set up as an organism separate from Kraków (6), initially forming a compact system having only transport links with Kraków. In 1958, Anna Ptaszycka presented a new plan for Kraków's spatial development which curbed industrialisation and promoted Howard's ideas of garden cities. The plan was approved by the municipal authorities of the time (Anna Ptaszycka was then head of Kraków's urban planning office and had a chance to direct the city's development towards the creation of a network of green areas). However, the plan was rejected by the socialist central government. Nonetheless, the direction for the development of green areas was preserved and, over the subsequent years, the green belt separating the two "cities" was consolidated. In 1966, the largest park in that area – Park Kultury i Wypoczynku, now called Park Lotników Polskich – was established. The basic function of the park planned as the largest one was to isolate Kraków from Nowa Huta and the steel plant there, named after Tadeusz Sendzimir (formerly after Vladimir Lenin). Originally, the park, together with its sports infrastructure, was to occupy an area of 2,300,000 sq. m., and its development was to continue until 1980. Ultimately, its first section of 80,000 sq. m. was opened in 1965, and the entire work was completed in 1966. Currently, the park covers an area of about 600,000 sq. m., of which 60,000 sq. m. in its southern part have been taken for the commercial project of the Garden of Experiences (Ogród Doświadczeń), and from the side of the Fort Pszona stronghold, a residential estate has been built, thus restricting the smooth stretch of open areas. As a result of projects developed in recent years, the compact greenery is smaller, and more and more areas are being taken over for various projects (Fig. 2).

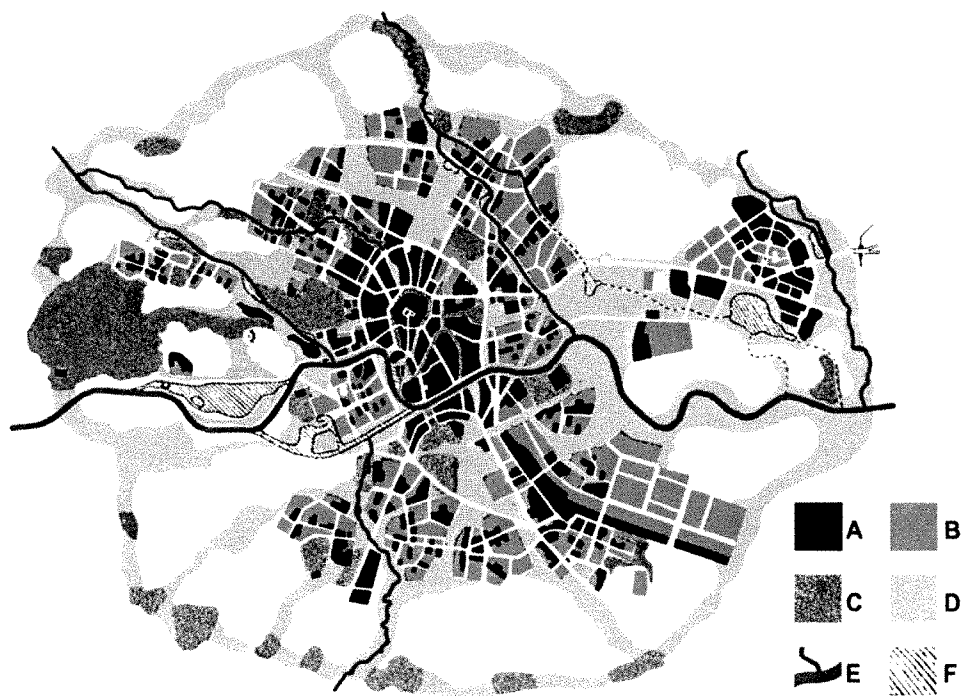


Fig. 1. Green buffer area between Kraków and Nowa Huta, as proposed in a very progressive plan for the development of Kraków from the time when back-up facilities were constructed for the steel plant

Explanation: A – existing buildings areas, B – designed buildings areas, C – existing green areas, D – designed green areas, E – the Wisła river and existing rivers or water areas, F – designed water areas

Source: <http://fotopolska.eu/86262,foto.html>, DoA: 27 August 2011, PM 3:00:32 CET

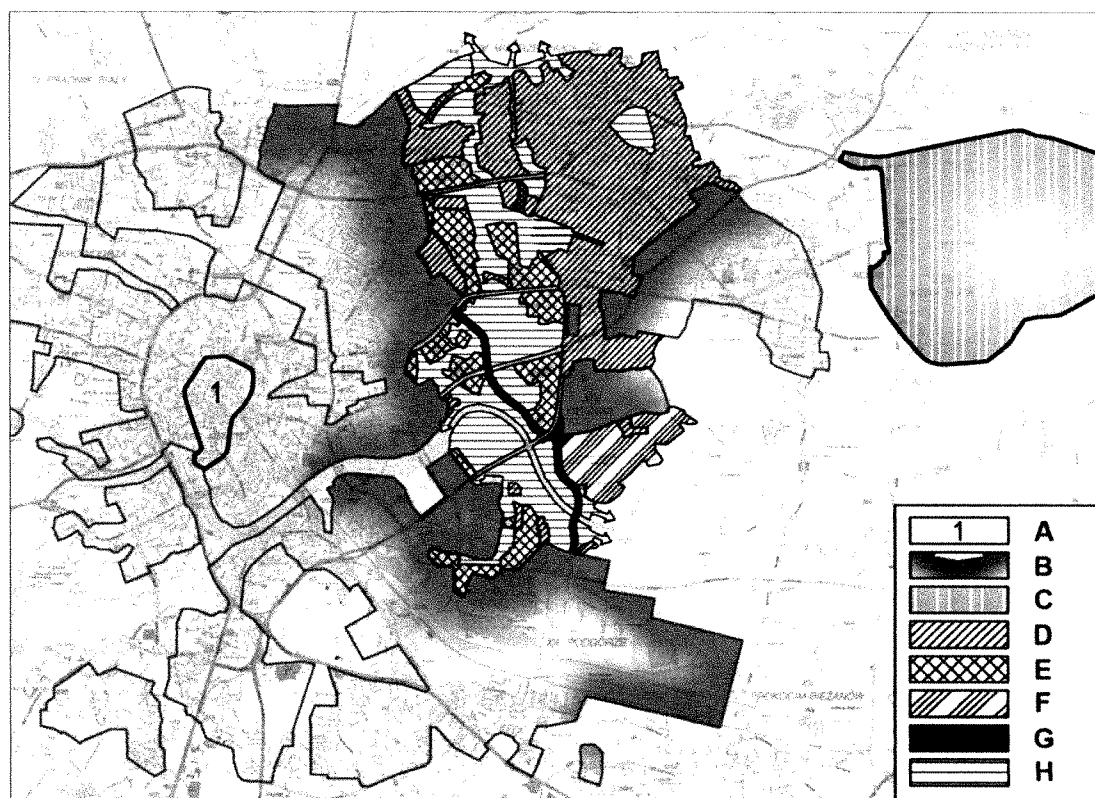


Fig. 2. Contemporary image of the city absorbing green areas

Explanation: A – historical town Center, B – city growth by A. Ptaszycka Master Plan, C – steelworks plant, D – housing development, E – commercial development, F – industrial development, G – road infrastructure, H – green areas

Source: Authors' compilation

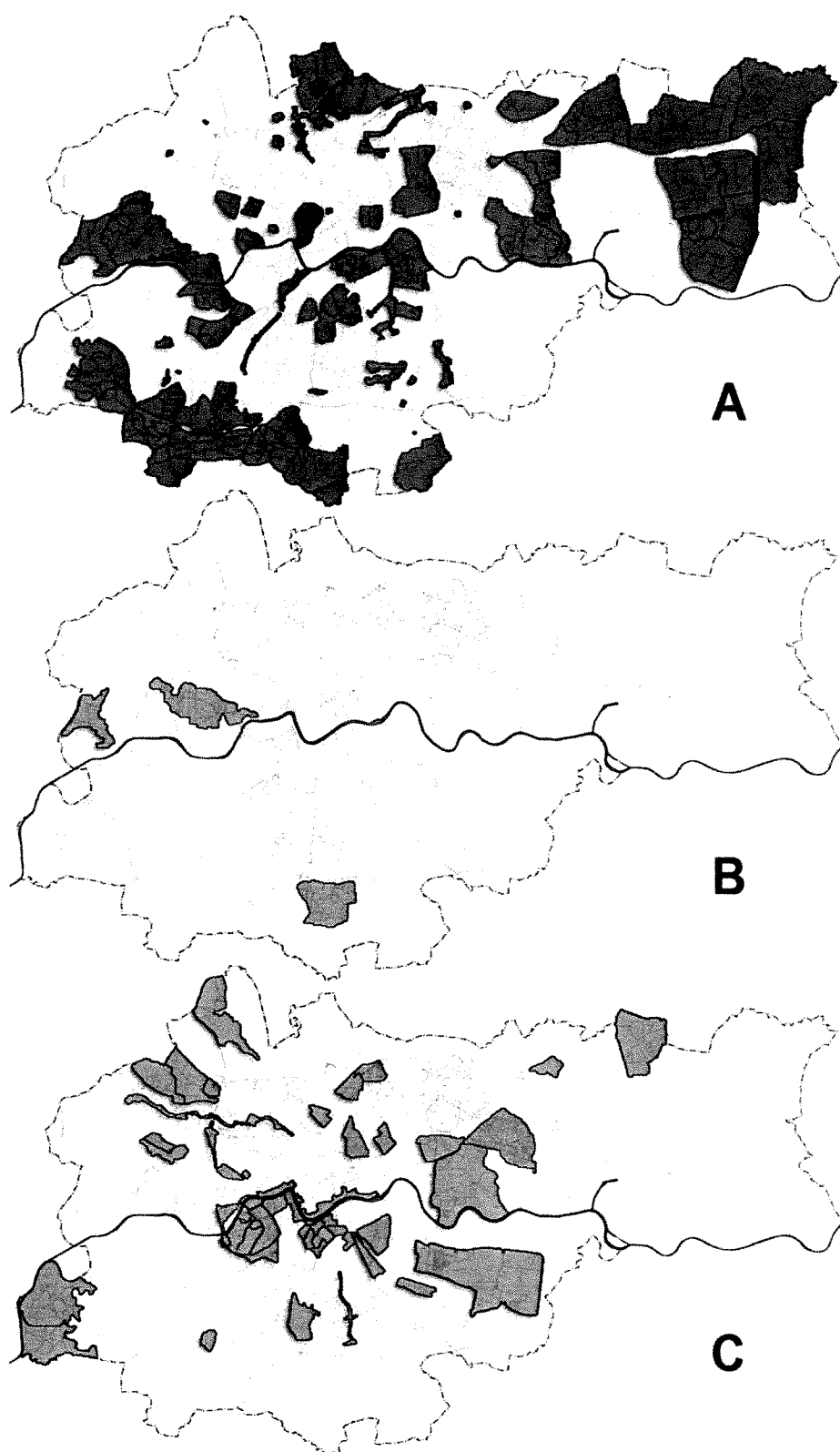


Fig. 3. Areas in Kraków covered by land development plans

Explanation: A – existing local development plans, B – approved local development plans, C – local development plans under procedures

Source: <http://planowanie.um.krakow.pl/bpp/>, DoA: 14 September 2011, PM 4:18:16 CET

The biggest ones include: Park Lotników Polskich; Plaza, M1, and Decathlon shopping centres; Polish Aviation Museum; Cracow University of Technology; Academy of Physical Education; Special Economic Zone: Cracow Technological Park; exhibition and congress centre, totalling 36,000 sq. m.; sports hall for 10,000–15,000 spectators; and the construction of Lema street (as an extension of Meissnera street – a project undertaken by the municipal infrastructure and transport department), and residential buildings.

Around the former runway and the Polish Aviation Museum, an aviation culture park is being developed on an area of 320,000 sq. m., at the place which used to be the Rakowice-Czyżyny airfield; until recently, the area was covered by vast green areas of allotment gardens. The project has changed the existing manner of use of the green areas but, following the tradition, the area has been planned as a green leisure zone.

Other sections of the city are also threatened by the loss of naturally green areas, even though this threat is not so explicit there. The up-market district of Wola Justowska too – which used to be very green – has been losing exceptional nature over time, and the green squares, parks and the area around the Kościuszko Mound (Kopiec Kościuszki) are being taken over by single-family residential projects (Fig. 3). Like in other districts of the city, open areas are gradually taken for development purposes because there are no urban planning guidelines in place in Kraków to protect the green areas of the city for future generations. The current Kraków study of the conditions and directions of spatial development is now being adopted. However, emphasis is placed therein on intensifying urban development and urban functions whilst pushing the recreational functions to the city's outskirts with the presumption that such functions will be fulfilled by the entire Kraków's metropolitan area. This idea is unrealistic because areas which still have some "green background" are not usually provided with good transport links with the city itself, and the leisure infrastructure is poor there. On the other hand, places which have traditionally been used for recreational purposes exceeded their capacity in terms of the numbers of tourists a long time ago and are currently finding it difficult to serve the weekend traffic from the Kraków ur-

ban complex. The structure of Kraków should be transformed with due respect for the existing attractions and with an understanding of the need to retain open areas for them to form a network and enable natural functioning of ecosystems. City parks used for Sunday family walks and, daily, by parents with little children are an exception here. Whilst serving city residents, most of them neither have any exceptional natural characteristics nor form networks, and can function independently. However, it would be desirable for new housing estates to be provided with areas which are green not only nominally but in reality as well. Housing estates with names like Gardens of Żabiniec (Ogrody Żabińca), Park Hill (Parkowe Wzgórze) or Green Residential Estate (Zielone osiedle) are green only to the extent required under the law which sets the size of naturally green areas or the distance from the neighbouring house. Oriented at generating a profit, developers would concentrate on the plot the maximum number of residential units (PUM) (7) rather than care for the beautiful view, the quality of public space and recreational areas. They do understand, however, people's need to live in proximity to nature and greenery. With due regard to the ever increasing size of developed areas, intensive construction activities and the pressure to develop land for construction purposes, efforts should be made to offer particular protection to open areas in the neighbourhood of existing urban structures, since they are most exposed to the threat of being absorbed by development projects.

In Kraków, there are many places with exceptional natural attractions. Many of them are protected, and many, too, are to be covered by protection measures in the nearest future (8).

3. Conclusions

The most serious threat is related to extending development projects, and such projects coming closer and closer to environmentally sensitive areas, because disturbance of the ecosystem will irreversibly destroy the existing values. This is what has happened to the pond which neighbours a large shopping centre. Despite the assurances from the centre's owner and the legal clauses in the applicable docu-

ments that the water reservoir would remain intact whilst the centre is in operation, it is now deprived of its original natural values and has become a place at the crossroads where someone would sometimes feed birds. It is impossible to intensively use an area in the immediate proximity of an environmentally protected area. Ensuring non-invasive use of neighbouring areas would be a desirable guideline to be included in the requirements set for the location of projects in the proximity of green zones.

Preserved open areas should be generally available and, when adapted should combine recreational functions with the maintenance of biodiversity of their habitats.

Kraków has exceptional cultural and landscape attractions and quite a big number of open areas with unique characteristics. These should be preserved for future generations to defy fashion trends and political transformations.

Spontaneous development of Kraków, without any wider plans, just in some small parts, is a huge threat to the preservation of existing leisure areas. Because of this, precise guidelines are needed for the intended use of areas neighbouring environmentally sensitive grounds, their type, scale and impact, in order to protect the landscape attractions which are amongst the desired recreational characteristics.

Notes

- (1) Dated to the beginning of the 1990s when the forerunners of modernity in architecture, detached from the tendencies of the time, were the late Wojciech Obtulowicz as well as Romuald Loegler.
- (2) Błonia commons – a triangular large grassland of 480,000 sq. m., entering the historic structure of the city. The contemporary Błonia commons are only a small portion of the former commons which were pastures on the dried polders on the Rudawa River. Today, however, this is one of Europe's largest meadows in a city centre. Since 2000, the Błonia commons have been on the register of heritage sites.
- (3) According to information provided by the Kraków City Hall, Department of Environmen-

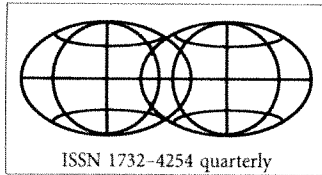
tal Protection, there are about 50 areas of ecological use.

- (4) Apart from the traditional line of the Wisła River boulevards, some small developed riverside areas include those along the Rudawa, Prądnik and Dłubnia Rivers within the Dłubniański Landscape Park and the Dłubnia residential estate.
- (5) These include: Planty Krakowskie of 214,200 sq. m.; Planty Dietlowskie of 49,600 sq. m.; Planty Floriana Nowackiego of 26,700 sq. m.; and the following parks: Park Strzelecki of 14,100 sq. m.; Park Tadeusza Kościuszki of 31,800 sq. m.; Park Henryka Jordana of 213,600 sq. m.; Park Krakowski of 51,400 sq. m.; Park Ludwika Decjusza of 95,400 sq. m.; and Park Wojciecha Bednarskiego of 83,900 sq. m.
- (6) Recreational parks which are most popular with Kraków residents include: Park Krowoderski of 80,100 sq. m.; Park Stanisława Wyspiańskiego of 25,700 sq. m.; Park Lotników Polskich of 591,400 sq. m.; Park Dywizjonu 303 of 60,000 sq. m.; Park Tysiąclecia of 112,900 sq. m.; Park Zielony Jar in the Wzgórza Krzesławickie estate, of 87,000 sq. m.; and Park Bieńczycki with the area around the pond, of 230,000 sq. m.
- (7) Intended by the architects (the general architect of Nowa Huta from 1949 was Tadeusz Ptasiński) and the authorities as a self-sufficient town for the huge Lenin steel plant which then employed 40,000 people and produced about 6.7 million tons of steel per year. (Currently the steel plant is employing about 3,000 workers and its output is about 1.3 million tons of steel a year).
- (8) Usable area of the apartments.

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Conceptual framework of value creation through CSR in separate member of value creation chain

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Abstract. The main goal of this paper is to prepare a conceptual framework which would help to determine where any kind of value might emerge while various actions of Corporate Social Responsibility (CSR) are implemented. Such conceptual framework is suggested as a backbone for further research and empiric justification in order to develop a simplified yet effective CSR outcome evaluation model which might be used in practice in any company. Such practical model should help to determine which CSR action might bring maximized value outcome with lowest costs. The main attention in this paper is concentrated only on a single company as a member of value creation chain (VCC). The paper lays foundation for perspective to develop the research in a holistic way – to evaluate the effect of CSR integration in whole VCC. Many authors have debated the different possibilities of simultaneously incorporating social, environmental and economic concerns into management thinking and practice (Aguilera et al., 2007) in organizational behavior; Buyse and Verbeke (2003); Starkey and Crane (2003); Barin-Cruz et al. (2006) in strategic management. All those scholars have been developing concept of CSR from different point of view. This paper concerns value creation through CSR as economical category. But therefore in order to indicate areas of possible value creation, various all above mentioned aspects of CSR concept are taken into account.

This paper suggests a framework of value creation through CSR, considering CSR implementation might help to create shared value for few beneficiaries simultaneously. The framework consists of all four types of responsibilities described by Carroll (1999), different levels of CSR activity, three major groups of beneficiaries (company, society, stakeholders) and areas of possible value creation.

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1. Introduction

Scientific problem as if true for all researches value creation through CSR is researched only episodically, concerning specific aspects, but not a holistic point of view, especially from the perspective of VCC. Furthermore, there is no framework available which would help to determine all possibilities of value creation through CSR while integrating it in VCC.

The objective of the research is to present a conceptual framework of CSR holistic integration into VCC from the perspective of separate member of VCC.

The methodology of the research: scientific literature review, the analysis of analytical and empirical studies and the synthesis of fragmentary knowledge on the subject.

The review of theoretical and empiric researches showed that value created through CSR for the company might emerge as a part of any of those benefits: financial benefits, better quality, marketing benefits, better organizational culture, effectiveness doing business globally.

2. Value creation through CSR

Concept of CSR is defined by the European Commission (2002, p. 5) and remembered by Steurer et al. (2005), CSR as “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis”. But as CSR is quite new concept there are disagreements in opinion should one or another activity to be called CSR or not. The aim of this paper doesn't concern the term of CSR itself, so we accept a broad viewpoint of CSR activity. According to many scholars (Tulder et al., 2009, Dicken, 2011) it is acknowl-

edged that CSR can have at least four general types. In some cases there are even used different terms corresponding to each type of CSR (Dicken, 2011):

- inactive CSR – corporate self responsibility,
- reactive CSR – corporate social responsiveness,
- active CSR – corporate social responsibility,
- interactive CSR – corporate societal responsibility.

There has been quite little proof that CSR increases profits (Vogel, 2005; Aras et al, 2010) and no consistent relation between CSR and economic performance has been established yet (Lindgreen, Swaen, 2005; Ioannou, Serafeim, 2010). Some researchers even suggest there may be a negative relationship between the CSR implementation and company profitability due to increased cost of CSR initiatives (Aupperle, Carroll, and Hatfield, 1985) which do not increase the bottom line of the company. However, Waddock and Graves (1997) noticed that positive proactive as opposed to reactive social responsibility is beneficial as part of good overall managerial practice at least in short-term oriented assessment. The positive effects of CSR on financial performance are being encouraged for research with some encouraging evidences (Stanwick, Stanwick, 1998; Pava, Krausz, 1997).

As financial benefits of CSR are not always obvious, different types of value should be remembered while evaluating benefits of CSR implementation. It is well known that exchange value can be identified and measured quite obviously, but CSR creates use value especially for stakeholders and society very often. The use value is a relative subject and doubtfully could be measured (Lepak et al., 2007; Jonikas, 2012). There are quite many publications which generally conclude that benefits from CSR implementations received by company remain in the center of most researches and might be grouped into two major trends: financial value and marketing benefits. Summarizing scientific publications, implementation of CSR might cause to emerge different forms

of value, especially for the company as the key player in CSR activities.

Yet another important point in value creation through CSR is that there already has been made a distinction between value creation and value appropriation. This recognizes that, in some cases, organizations that create new value will lose or have to share this value with other stakeholders, such as employees, competitors, or society (Nohria, Ghoshal, 1994; Makadok, Coff, 2002; Chatain, Zemsky, 2011; Porter, Kramer, 2011). Researching value creation through CSR, Porter and Kramer (2011) suggested concept of shared value. Shared value is defined as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress. Article related approach was given even earlier by Nohria and Ghoshal (1994) – it was named as creating share value.

Some scientists (Vaitkevičius, Stukaitė, 2009; Valackienė, Micevičienė, 2011) acknowledge that corporate social responsibility (CSR) discussions often fall into a logical trap. If some socially desirable activity is profitable, then it is best described as “intelligent operation of the business.” If the socially desirable activity is not profitable, then companies will not voluntarily undertake it unless required to do so by law or regulation. When private profits and public welfare are aligned, CSR seems to be irrelevant. Companies will undertake this activity driven by their self-interest, even if they call their actions as CSR, and shared value will be created. Such value creation through CSR seems to be more sustainable, because its emergence depends less on corporate interests and government regulations. If company adopts CSR concepts in its business activity, there is a greater probability that shared value will be created. That value might emerge as use or as exchange value. Therefore all attention in this paperwork is focused on shared value creation through CSR.

Though there are many possibilities for value creation through CSR, scholars note some major problems especially related to CSR and stakeholders conjunction. Jušėius (2007), Yuan et al. (2011) pointed the situation that societal stakeholders' increasingly demand CSR initiatives, and simultaneous

corporate managers require that any such initiatives should improve business performance. Such situation has triggered various alternative strategies to integrate CSR in prevailing business activities, but not all of them are successful.

As theoretical researches show, value can be created through CSR implementation in large as well as in small companies. Though, not always CSR helps to achieve desired benefits, effective communication of CSR implementation is stressed as one of major factors of value creation through CSR. It should lead to further discussions about CSR implementation strategies and capture of created value. As concluding theoretical assumptions about value creation, it should be noted that different type value might emerge. Attention should be paid, that according to most scholars, only shared value creation through CSR seems to be sustainable. It's already foreseen that CSR will evolve and value creation through CSR will change. Most likely, implementation of CSR will become more oriented towards creation of shared value.

3. Aspects of CSR implementation in VCC

It is well noticed that companies can create and sustain a competitive advantage by cooperating with other companies in a supply chain by nurturing and building competencies through collaborative partnerships (Kay, 1993; Dyer, 1997; Blankenburg Holm et al., 1999; Lambert et al., 2004). Furthermore, companies are now seeking innovative ways of unleashing the creativity of their suppliers and taking advantage of their expertise (Sahay, 2003; Swink, 2006). As Wang and Wei (2007) noted, cost efficiency is the most cited goal in supply chain management, but due to rapid changes in market conditions, evolving technologies or other developments, cooperation in supply chain has transformed. The concept of a value creation chain (VCC) evolved from the idea of supply chain (Rainbird 2004) which describes the series of steps a product (usually a tangible one) takes from the manufacturer to the consumer. The word “value” was substituted for “supply” to suggest that each step in the chain should add value rather simply

move the product along. Value creation is commonly understood as the process whereby the capabilities of partners in a VCC are combined such that the competitive advantage of the VCC (or one or more of the partners) is improved (Larson, 1992; Hammervoll, 2009). According to Borys and Jemison (1989), there are two types of value creation logic in a supply chain: sequential interdependence and reciprocal interdependence. Stabell and Fjeldstad (1998) have amended the value creation logics by offering to take into account the objectives of the relationships, the focus of the coordination, and the nature of the value-creation initiatives. Implementation CSR seeking for shared value ought to be one of the best examples of value-creation initiative.

Pietrobelli et al. (2006) explains the concept of value chain as all activities necessary to “bring a product from conception to market”. Therefore, it includes product development, different phases of production, extraction of raw materials, semi-finished materials, component production and assembly, distribution, marketing and even recycling. Feller et al. (2006) offers to involve the demand or customer activity in value creation. In such case value chain could be called an upstream flow of value, in the form of demand, from customers to supplier. As these activities may be spread over several different companies and countries, the value chain can become global. Effectiveness while doing business globally might be acknowledged as one of major motivators for integrating CSR into value creation chains. International actions such as the UN Global Compact (substantive human rights standards) or the Global Reporting Initiative (social, economic, and environmental disclosure format) are important factors, influencing companies to implement CSR initiatives and so become agents of social change (Aguilera et al., 2007). Under such assumption a CSR program may become the primary requirement for doing business globally. As Kagan et al. (2003) argue, multinational companies, particularly the high-profile ones, are expected to be pioneers in adopting CSR initiatives to reach social expectations, which in turn reinforce other factors, such as consumers, and institutional investors. Talking about CSR as value creation possibility, it is necessary to broaden the view up to the Global Value Chain definition. This term was developed along the lines of the concept of a global commodity chain by

Hopkins and Wallerstein (1986), who focused on international chains for agricultural products. Such an approach usually involves analysis of price formation at different stages of production and processing. Humphrey and Schmitz (2002) proved that there are governance trends in global value chains. Some companies, differently to simple market relationships, set and enforce the parameters under which others in the global chain operate. These parameters have a control function and may apply to the product definition, production process, production volume, time of delivery and price.

CSR implementation in VCC was confirmed by Cruz and Boehe (2008) who proposed a new concept called “sustainable global value chains” that might stimulate an emerging research field. Their research showed that such value chains might gain additional benefits including: bargaining power, differentiation strategy, and awareness strategy. Sustainable global value chains, compared to conventional commodity global value chains, are influenced by certification agencies that usually set and enforce product and process related parameters. These environmental and social parameters impose new costs on the chain and may decrease the price competitiveness of CSR products. Consequently, the chain is driven towards a differentiation strategy, focusing on specific market segments that are willing to absorb CSR products. Though CSR as a distinct form of product differentiation has been acknowledged for more than decade, it still depends on particular success factors named by Reinhardt (1998).

Value is created and extracted in a network of relationships, and value can best be understood holistically as a function of the entire network. Network externalities such as information cascades, demand queues, social contagion, bandwagons, herding, and path-dependence in the cultural industries have been explicitly analyzed by Kretschmer et al. (1999) – amongst others. Such externalities are named as a key feature to understanding value. Watts (2003) describes three types of externalities which are pertinent here:

- information externalities;
- coercive externalities;
- market externalities.

According to Hearn et al. (2007), new value creation is achieved through manipulation of information and the characteristics of information are very

different from ordinary goods. This is especially important while analyzing value creation chains and transfer of information. Information externalities occur when product choices are affected substantially by information outside the product. As Watts (2003) explains, coercive externalities result when a consumer is persuaded to make particular choices of products or suppliers. Market externalities operate when the value of a product increases in proportion to the number of people who use it. Implied in this shift is that value lies in the ability of the product to connect us to others. Moreover, it becomes increasingly difficult for the system to change, even though individuals might prefer a different product or service. The cost of the disconnect to the individual, and the impossibility of collective opt-out, means certain product classes become *de facto* monopolies or at least are dominated by large hubs in the network of connections. It is quite possible that some value creation chains might create such products according to requirements of any CSR policy.

Recent literature on standards in global value chains has emphasized the power of leading firms in defining standards and codes of conduct, as well as the ways in which CSR pressures can alter the nature of governance within the value chain (Altenburg, 2006; Gereffi et al., 2005). This tendency suggests that companies might receive different value and take different costs of CSR action while implementing the same CSR policy.

Some authors additionally offer to use the term of multi-stakeholder partnerships (that bring together public and private actors) as local stakeholders take more influence in the formulation, implementation, and monitoring of CSR standards within global VCC (Prahalad, Ramaswamy, 2002). This might provide greater scope for coordination and harmonization of CSR amongst society, thereby reducing the need for individual brands to undertake their own audits of CSR implementation. Prahalad and Ramaswamy (2002) strongly support consumer-centric view of value creation and suggest the consumer:

- is an integral part of the system for value creation;
- can influence where, when, and how value is generated;
- need not respect industry boundaries in the search for value;

- can compete with companies or leverage companies against each other for value extraction;
- can co-create value with the company at multiple points of exchange.

As Lund-Thomsen and Nadvi (2010) noticed, in highly visible VCC compliance with social and environmental concerns are central to the organization and governance of the chain and the relationships between local suppliers and global lead firms. In contrast, less visible chains are those where external CSR pressures are driven by a wider set of actors/institutions and/or less dominant global lead firms. On the one hand, less visible chains may include smaller or medium-sized branded buyers less capable of enforcing their CSR demands throughout the chain. On the other hand, external CSR pressures in less visible chains may also reflect a mixture of international or national regulatory frameworks and media attention as important CSR drivers in the VCC.

Concluding the research of different theoretical perspectives, two key motivators or initiators of value creation in supply chains are identified: structural mechanisms and relationship building (Jayaram et al., 2004). Furthermore it is proposed and proved by empiric research that these initiators have a positive influence on value creation efforts, operationalized by the improvement of supply processes and responsiveness to customer needs as well as internal production processes.

4. Conceptual framework

The framework is developed from single company view point which is the part of VCC (Fig. 1). The suggested framework conceptually shows all possible areas of value creation through CSR as well as beneficiaries of created value. The framework is proposed considering already performed theoretical and empiric researches on CSR activity benefits. It suggests taking into account that CSR, which is implemented by the company, can be of four types (or stages according to some scholars).

The implementation of CSR, as suggested by A. Carroll (1999), comes out in responsibility relations with any of stakeholders group or society in four fields: ethic, philanthropic, legal, and econom-

ic. It is important to acknowledge that if the company is bounded to responsibility by legal means, the company must perform current action of CSR, independently of what value it will create. So in such case the proposed conceptual model could only give some indications to the company, but will not influence the decision on CSR implementation. Quite similar situation is, once company decides to take some CSR actions due to ethic or philanthropic motives. CSR actions will be taken, most like-

ly, without deeper evaluations of possible to create value. But such framework at least suggests taking a look at possible alternative CSR actions – maybe any other action could bring higher shared value. This conceptual framework is most useful for situations when CSR responsibility emerges as an outcome of economic considerations, because any company in such situation wants to know costs and benefits before taking any decisions on CSR action.

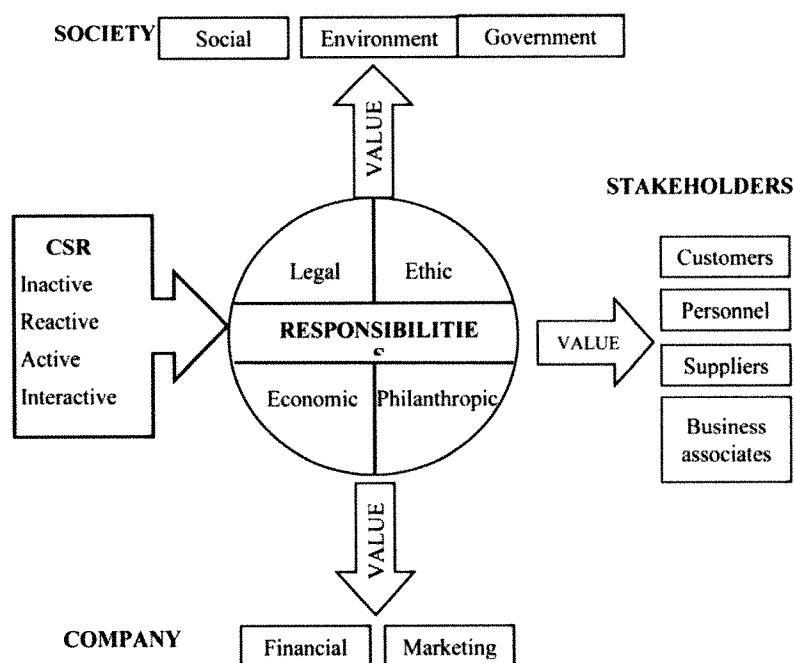


Fig. 1. Value creation through CSR from single company perspective

Source: Own compilation

The framework foresees three major groups who can claim for a part of created shared value: society, stakeholders, and company itself. According to the research, beneficiaries of shared value might be very different, so the framework suggests grouping them. Furthermore, CSR might help to create value in very different forms. So the conceptual model shows only most common forms in which value appears, but it does not limit or neglect any other form of value.

There are three major directions for further research of value creation through CSR using proposed framework.

1. The suggested framework should be modified according and developed to the holistic concept of VCC. The main point is that not every created value is transferred along the VCC. So while evaluating the effectiveness of CSR activities in the VCC, attention should be focused only on transferred value. The goal of new model would be to allocate and measure value creation and transfer in each stage of VCC. Such model would help to compare the effectiveness of different VCC as well as to look for possible synergy effect when CSR is smoothly implemented in whole VCC. The development of such model could lead to its practical adoption in strategic marketing, especially where global competition is faced (VCC compete with VCC).
2. This framework as well as an updated one (for value creation and transfer in whole VCC) could be developed into calculation system which

would be based on CSR efforts (as input for calculation) and created exchange value (as an output). Final result of the research could lead to development of formulas, automated calculation tables which would be practically adoptable. Yet it is for further development, but such calculation system could be useful in at least few ways:

- it could forecast expected value volumes if company implements CSR activities at certain amount (or level);
 - it could show whether it is useful for company to implement certain CSR initiatives (costs of CSR activity versus value received by company);
 - to forecast allocation of created value – to show which beneficiary receives;
 - to forecast the added value in the VCC created through implementation of CSR.
3. The suggested framework should be enhanced from the perspective of value creation period. As theoretical researches showed (Jonikas, 2012) value through CSR might be created, captured and accumulated in short term and long term periods i.e. brand value, impact on environment and human health.

5. Conclusions

As analysis show, shared value creation seems to be most sustainable way in implementation of CSR. Further studies should concentrate attention on shared value creation where company is one of beneficiaries. In pursuance to research and evaluate the effect of CSR integration into VCC, few major aspects should be taken into account:

- Value created through CSR might emerge of different types. Each of them is not equally simple to catch and measure. Therefore evaluating shared value might be extremely difficult because value received by stakeholders and society appear as use value quite often.
- CSR age, stage or policy might be considered while evaluating CSR implementation impact on value creation in VCC as well as different types of responsibility conjunctions.
- Leading and following companies of VCC should be identified. Theoretical research shows that there is much greater possibility for leading

companies to benefit from CSR implementation in VCC, while following companies are forced to follow the requirements of leading company, even if compliance to them causes more costs than benefits.

Considering all these, future research of CSR in VCC could be simplified in the following way:

1. The company is an implementer of CSR, so measuring its received value is crucial. The methodology of further researches should allow any kind of value to be converted or measured as exchange value. If company receives lower value than takes costs to implement CSR policy, sustainability of CSR activity will be put under question.
2. If any society or any group of stakeholders receives any exchange value it should be counted in currency or in any other unit. But if use value emerges for society or stakeholders, it is not necessary to measure it as exchange value. The most important point is whether society or any group of stakeholders has received any use value or not while company was implementing CSR initiatives. If it was and company received value for itself, than shared value was created. Only one question will remain – on what proportions this shared value was distributed for company and stakeholders or society.

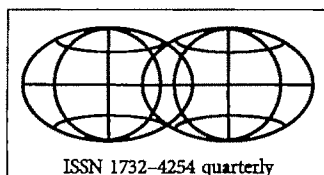
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A more efficient match between firms' demand, VET supply and human capital capacities through bottom-up, participative governance

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Abstract. One of the main challenges facing EU territories is the development of strategies to better adapt to changing global socio-economic trends. Lifelong education and training is a main strategic tool and a key component in the achievement of EU goals. One component of the lifelong education concept is Vocational Education and Training (VET), aimed at closing the gap between workers' skills and qualification and changing demand in labour markets. Although local partnerships seem to be an adequate tool to implement VET strategies, some authors identify obstacles that can be attributed to bad practices. Thus, more evidence is needed to support the idea that local development and public-private partnerships are optimal organisational environments for the design and implementation of VET strategies and actions at local and sub-regional levels. The purpose of this paper is to contribute to an analysis of the state of the art as regards local VET partnerships in Europe and to provide recommendations for the process of initiation and management of expert VET partnerships.

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1. Introduction

One of the main challenges currently facing EU territories is the development of strategies to better adapt to changing and more demanding global socio-economic trends. Lifelong education and training is a main strategic tool and indeed a key component in the achievement of the EU strategy goals. One component of the lifelong education and training concept is the Vocational Education and Training (VET), aimed at closing the gap between workers' skills and qualification, and changing demand in the labour market. Although VET has proved its capacity to increase efficiency and productivity, not everything offered under this “label” is good. It is, therefore, necessary to establish mechanisms to ensure quality and efficiency of what VET offers. According to the European Common Quality Assurance Framework for VET, this could be measured in terms of increasing employability, improving the match between supply and demand, and promoting better access to lifelong training, especially for disadvantaged people (CEDEFOP, 2009a).

In order to achieve quality and efficiency in VET, there are two main requirements. On the one hand, to have suitable instruments to comprehend and measure the components defining VET supply and demand, and to ensure that information is updated and accessible to different sectors. On the other hand, to have efficient instruments to work for the identification of VET needs and the promotion of lifelong learning within companies. Although it seems that local partnerships are an appropriate

tool to design and implement VET strategies and actions, some authors have pointed out challenges and potential damage that can be attributed to partnership bad practices. Thus, more evidence is needed to support the idea that local development and public-private partnerships (PPPs) are optimal organisational environments for the design and implementation of VET strategies and actions at local and sub-regional levels. Therefore, the purpose of this paper is to contribute to an analysis of the state of the art as regards local VET partnerships in Europe and to provide recommendations for decision makers, practitioners and other stakeholders in the process of initiation and management of expert VET partnerships. These guidelines have been tested in VET partnerships in the territories participating in the Let's Adapt Project, namely (set-up date in brackets): *Chambre de Metiers* (France, 1931), *Arad* (Romania, 2001), *Cascais* (Portugal, 2004), *Békés* (Hungary, 2006), *Confservizi Lazio* (Italy, 2009), *Ayuntamiento de Gandia* (Spain, 2009).

VET partnerships are conceived as information and advice tools useful for the design of vocational training policies and actions, adapted to the needs of a territory or productive sector. The partnership is a working group comprising representatives of those organisations and institutions involved in the supply and demand of vocational training. The interaction among these stakeholders encourages more accurate decisions regarding the provision of vocational training needed by a territory or industry. These partnerships are also created with a sustainability aim, that is, they will remain in the

territories concerned, continuously monitoring VET quality in those areas. The creation of a partnership aims at ensuring the involvement and commitment of main economic and social actors in VET.

2. A more effective labour market through VET

Greater global competition, the presence of a high percentage of low skilled labour in the EU, an increasingly ageing population, and the rigidities of educational systems are only some of the challenges faced by European society. The different spheres evolving within economy-driven processes and the educational system generate maladjustments between the working skills needed by companies and the training profiles offered (Pike et al., 2006). In many local labour markets, these challenges strongly influence the extent to which local economies become competitive. Accordingly, an appropriate response to these challenges will result in increasing levels of welfare and employment. This is in contrast to an inadequate or negligent response which can result in the greater loss of competitiveness of enterprises and the associated risk of relocation, increased unemployment and a general loss of competitive positioning.

The EU decided some years ago that common action in the field of VET would be essential to improve the match between job and skill demands. This statement gave rise to a Council Resolution on the 19th December 2002 regarding the promotion of enhanced European cooperation in VET (2003/C 13/02). This document acknowledges the relevance of VET “*for promoting employability, social cohesion, active citizenship, and personal as well as professional fulfilment*” (Council of the European Union, 2002, p. 7). It also emphasises the importance of providing opportunities for the achievement of adequate skills and training for everybody in order to ensure that the European labour market “is open and accessible to all”.

The relevance of VET is established in relation to the ongoing transition of the European economy into a knowledge-based economy: “*the transition towards a knowledge-based economy capable of sustainable economic growth with more and better jobs and greater social cohesion brings new challenges to*

the development of human resources” (Council of the European Union, 2002, p. 4). The document also recognises that the current context calls for traditional ways of training (i.e. initial training) and also for the more innovative concept of lifelong learning. In that document, the Council reaffirms its commitment to enhanced cooperation in vocational education and training in order to remove obstacles to occupational and geographic mobility and to promote access to lifelong learning (CEDEFOP, 2009b).

The Council of Europe Resolution, also known as the Copenhagen Declaration, acknowledges that priority should be given to certain aspects: first, “*strengthening the European dimension in VET with the aim of improving closer cooperation in order to facilitate and promote mobility and the development of inter-institutional cooperation, partnerships and other trans-national initiatives*” (Council of the European Union, 2002, p. 2); (ii) second, information and guidance through increasing transparency in VET and strengthening policies, systems and practices that support information, guidance and counselling; (iii) third, the recognition of competences and qualifications, through actions such as investigating transparency, comparability, transferability between different countries and at different levels; (iv) fourth, quality assurance through promoting cooperation with a particular focus on the exchange of models and methods, among other actions. The Declaration has been followed by biannual reviews of the process.

This process has allowed for the development of a number of tools to support stakeholders (i.e. citizens, learning providers, companies, guidance counsellors and educational authorities) and has to exploit some of the potentials of the European lifelong learning area and the EU-wide labour market. These instruments are (http://ec.europa.eu/education/lifelong-learning-policy/doc40_en.htm, DoA: 26 December 2012):

- The European Framework of Key Competences, which identifies the skills that people need to lead successful lives in today's world.
- The European Qualification Framework for lifelong learning (EQF) aimed at linking countries' qualification systems by acting as a translation device for qualifications across different EU Member States, employers and individuals, thus making it easier for individuals to work or study abroad.

- Europass, which helps people make their qualifications and skills better understood and recognised throughout Europe.
- The European Credit Transfer and Accumulation System (ECTS), which provides a common basis for formally recognising study periods abroad.
- The National Academic Recognition Information Centres (NARIC), which are contact points for information about the academic recognition of diplomas and periods of study abroad.
- The European Credit System for Vocational Education and Training (ECVET), which is a system under development, for the transfer, accumulation and recognition of learning outcomes in Europe, including those outside the formal training system.
- The European Quality Assurance Reference framework for Vocational Education and Training (EQARF), which is a reference instrument to help Member States promote and monitor the continuous improvement of their VET systems, based on common European references.

This particularly favourable institutional and political framework makes appropriate development of tools to support managers and decision makers in the field of VET.

3. The role of PPPs in the achievement of a more sustainable development

Local, public-private VET partnerships are increasingly used for designing and delivering VET policies and strategies. The concept of local partnership is closely linked to the paradigm of local development, in which the involvement of local society in the development process is a key aspect. The following paragraphs present the philosophy of local partnerships as an essential tool of the new governance, contributing to more effective and sustainable delivery of policies.

3.1. The emergence of the local development approach

The process of globalisation and the subsequent increasing competition between territories, and the emergence of flexible patterns of production have contributed greatly to the enhancement

of local development approaches for policy design and implementation that complement traditional “top down” practices. Stöhr (1990) points out some key processes that characterise the new model of post-production fostering the consolidation of local development strategies: the rapid emergence of new production technologies and communication, the new forms of “relocated” business organisation, increasing competition between regions to attract business, the need for increased participation in markets through improved productivity due to the inconsistency of many markets and the inefficiency of many traditional development policies that are not flexible or sufficiently innovative.

This newer approach to development “from the territories and their societies” (Noguera, 2010) has several *specific features* in relation to *policy design and management* (Silva Lira, 2003): first, development processes and their actions emerge from local society and need the existence of leadership to optimise the resources of local development; second, development strategy is based upon solidarity with the territory through cultural identity, allowing for differentiation and the creation of a territorial brand; third, policy actions are managed from “below” with the participation of representatives of interest groups; fourth, local leadership is essential to implement the development strategy through animation and social cohesion; fifth, the local development strategy combines the potential of an area, from an integrated approach, by harnessing all available resources so that it can attract, as far as possible, external resources that conform to the predefined strategy; finally, the management of the strategy must be sufficiently flexible to enhance labour resources through creative and innovative actions.

Other important principles can be added to those stated. On the one hand, local development processes are in most cases endogenous and therefore voluntary. So their success very much depends upon whether society perceives the local development strategy as its own, and this is very much related to the extent to which society has had the opportunity to participate. On the other hand, because of the endogenous and voluntary nature of local development processes, the commitment of public and private actors is essential, so as to acquire the ability to execute financial operations under the development strategy (Esparcia et al., 2000) (Table 1).

Table 1. Conceptualisation of the local development approach

What is LD?	• From an economic focus to an integrated approach • Variability depending on time and space • Variability depending on social groups and on culture of territory (principles and values)
What is it for?	• Improve quality of life of citizens • Deciding on the future of the territory by defining actions in the present
Who is it for?	• Local development strategies may benefit particular groups and harm other. Local development must try to promote interests if all local groups (consensus decisions)
What should be?	• An integrated, coordinated and sustainable action from all local actors, deriving from a common vision of the future, finding win-win situations and based on consensus

Source: Own elaboration

3.2. New forms of governance and the rise of participation

The concept of “governance” is broad and includes not only the institutional framework and public relations, but also private organisations and associations, and the relationships between them. Lakso and Kahila (2002) state that causal relationships between the type and quality of governance and regional economic dynamics are often described as correlations, possibly being indirect relationships between structure and function, expressed in more direct links with policy and its implementation.

Models and styles of governance vary considerably. National cultures and traditions have an important impact on the type of governance structure, on the distribution of powers between different levels of decision-making and upon the presence and characteristics of private organisations and associations. One of the concepts of governance refers to “representations or theoretical interactions between social systems”. Interaction with the social system involves the adaptation of governance through the development of new processes, new power structures and new methods of governance (Rhodes, 1996). Often this adjustment involves the inclusion of private and community sectors in new forms of government.

The “capacity” of governance in a territory is expressed by the possibility of integrating the interests of different local groups in developing strategies and consensual policies (Le Gales, 1998). This ability is frequently limited and frustrated by resource limitations.

3.3. PPPs for new governance: consensus development paths through collaborative strategies and inclusive leaderships

Until the 1980’s there was an overall consensus about the role of State intervention as a means of attenuating the effects of uneven economic and social restructuring (Bowler, Lewis, 1991). “Development” was the business of the State. Those approaches were sectoral and undertaken by individual government departments. Improvements achieved did not reach everybody, only particular groups. In fact, it has been said that many of the problems facing local societies arise from the structure of government decision-making based on vertical sectors and individual departments (Wright, 1992). Issues such as partnerships, community involvement, capacity building and empowerment are crucial in this context (Griffin, Curtin, 2007). Empowerment has been defined as the “process by which disadvantaged communities define their own needs and determine the response that is made to them” (Barr, 1995).

Empowerment is a continuous process that enables people to understand, upgrade and use their capacity to better control and gain power over their own lives. Some authors regard the process of capacity building and community involvement as empowering and decisive in any community development process (Waterhouse et al., 2006). Capacity building consists of raising people’s knowledge, awareness and skills to use their own capacity to tackle their needs; it implies understanding, communication and the ability to take decisions. Em-

powerment, capacity building and community involvement are closely inter-related processes, all of which need the emphasis placed upon justification; what makes the difference between involving people or not? A series of rationales for community involvement have been set out, following the basis of good practice in territorial development (Bryden, 1997): (i) advancement of democratic practice in society and increasing the legitimacy of public action; (ii) meeting the needs of clients, consumers and communities; (iii) recognising and tapping local knowledge and involving “stakeholders” who have the power to act locally; (iv) controlling dissent and desiring to change individual and social behaviour; (v) educating the public; (vi) encouraging negotiated outcomes in situations where there are conflicts of interest; and (vii) gaining “local ownership” of projects and encouraging self-reliance through “empowerment”. In fact, it has been recognised that many localities face a situation which requires the support of an institutional framework, if a bottom-up approach is to be initiated (Esparcia, Noguera, 1995). For example, some regulatory issues are often critical aspects that can only be solved by legislative changes at national or European levels. Nevertheless, when local circumstances do not provide the necessary conditions for communities to identify their needs and to determine, or at least influence, the responses to them, then a capacity building process needs to be promoted by those bodies that have the technical support and the institutional credibility to do so. Within this context, partnerships were promoted directly by the European Commission early on the Structural Funds Review in 1992 as very relevant tools to promote sustainable development.

This tendency is now widely recognised by most EU countries, particularly with regard to changes in institutional structure. As early as 1990, the OECD described the following common “emerging” features in governance (OECD, 1990): (i) major participation in the process of formulating policies and programmes at all levels of government; (ii) changes in the distribution of policy formulation responsibilities among different departments within the government, reflecting the need for integrated action for policy formulation; (iii) recognition that decentralisation is not enough to rectify institutional rigidities when formulating policies;

and (iv) growing cooperation between public and private sectors when addressing development problems.

The European Commission recognises the utility of partnerships as instruments to promote cooperation amongst different parties, so as to increase the effectiveness of policy formulation and implementation. Partnership is the key principle in the Structural Funds reform, as it determines the implementation of the four other principles. Implementing partnership requires close cooperation between all parties pursuing a common goal. This bottom-up, participative approach has created high expectations among local actors and decision makers and seems to have the potential to make it advisable to extend further this philosophy of development. The PRIDE research project (1999–2001) brought together academic research teams in six European countries to study how (and how far) the “local partnership approach”, as a distinctive way of management of development policies, really does promote development and what might be done to improve its effectiveness in this respect.

The PRIDE research project concluded that there were four main ideas with regard to the role of partnerships in local development processes: first, most partnerships are created as a consequence of a funding opportunity, usually external. This means that their “life cycle” is closely linked to the project or activity supplying the funding. So the potential for local partnerships to act as centres for long-term strategic development and the benefits of cooperation are only secondary to the availability of external funding. Second, as a consequence, local partnerships become the guardians of “project-oriented” cooperation, rather than strategic cooperation. Third, in most cases, the leading role of public institutions is fundamental, at least during the initial stages. This is due to their major capacity for action and the resources available to them to promote local cooperation and because of their greater links with regional and national institutions that distribute funding for local cooperation. Fourth, despite the above-mentioned weaknesses, local partnerships possess several benefits for local communities, the most important being the improvement of cooperation, mutual understanding and the exchange of information in areas where individualism previously ruled (Table 2).

Table 2. Main strengths and constraints of PPP for rural development. PRIDE project

Strengths (ranked in relevance)	Constraints (ranked in relevance)
• Composition and characteristics of management staff • Atmosphere of cooperation • Concern and implications to local society • Availability of funding • Existence of key actors • Existence of potential resources • Efficient management • Existence of cooperative culture • Consensus within the partnership	• Lack of funding • Lack of social concern and motivation • External difficulties and obstacles • Bureaucracy • Lack of internal coordination • Time • Lack of consensus (strategies, objectives, etc.) • Local political conflicts • Inadequate planning • Lack of skilled human resources

Source: Esparcia et al. (2000)

Local partnerships, as tools of the new governance, add value to development processes. This is well described by Moseley (2003) for the case of rural development (see Fig. 1), but we consider the principles equally valid for other environments and, in particular, the planning and management of VET at local and regional levels. Intrinsic characteristics of local partnerships (bringing together local actors and creating a neutral institutional space) lead to the potential development of valuable capabilities in the local environment. These include, amongst others, the following: necessary skills and attitudes for joint working and cooperation, potential to pool resources and generate common action, generation of neutral institutional space where decisions can be taken by consensus, opportunity to think and act in more strategic terms, and greater flexibility in decision-making and management.

These capabilities can be “locked” or “unlocked” depending upon the features of several “key elements” (see Fig. 1):

- **Partners:** are partners representative of the main visions? Are all stakeholders represented? Do they hold a shared vision of the future? Have they had the opportunity to agree upon such a vision? Do they possess the necessary skills? Is there adequate leadership? Are there conflicting relationships amongst partners?
- **Resources:** does the partnership have its own resources? Is there internal or external funding for the partnership available on a regular basis? Are partners contributing resources other than money (i.e. staff, equipment, premises, etc.)?
- **Organisation:** What are the structures of the partnership? Is there a clear distribution of func-

tions and responsibilities? Are there statutes that regulate the rules of interaction between members and bodies of the partnership? Do technical staff hold adequate competences in relation to the actions and objectives of the partnership? Is there good communication between manager and executive board?

- **Processes:** Does the partnership have a relevant role in the context of decision-making at local level? Does the partnership participate in or lead a strategic planning process? Is the partnership linked through networks with other organisations, both local and external? Is the partnership promoting networking? Is the partnership facilitating positive attitudinal change in relation to decision-making behaviour of local actors?

Despite the enormous potential of partnerships, their capacity to deliver key outcomes to local society and territory will depend on the direction of the action of the above-mentioned key elements. Only if these elements show good practice, will the partnership fulfil its potential: (i) the overall process of sustainable development is achieved by promoting more collaborative action by local institutions and organisations and a more synergic development, based upon a common understanding of the future; (ii) the action of the partnership is linked to a premeditated development strategy that guides decision-making and the actions of the local actors, facilitating benefits, such as better focused policy design and management, multiplication of synergies and minimisation of overlapping or contradictory actions; (iii) greater social inclusion, community involvement and capacity building coming from an inclusive decision-making and learning process, as-

sociated with participation and strategic development; and (iv) a stronger and more legitimate local

democracy is promoted, based upon participation and inclusion.

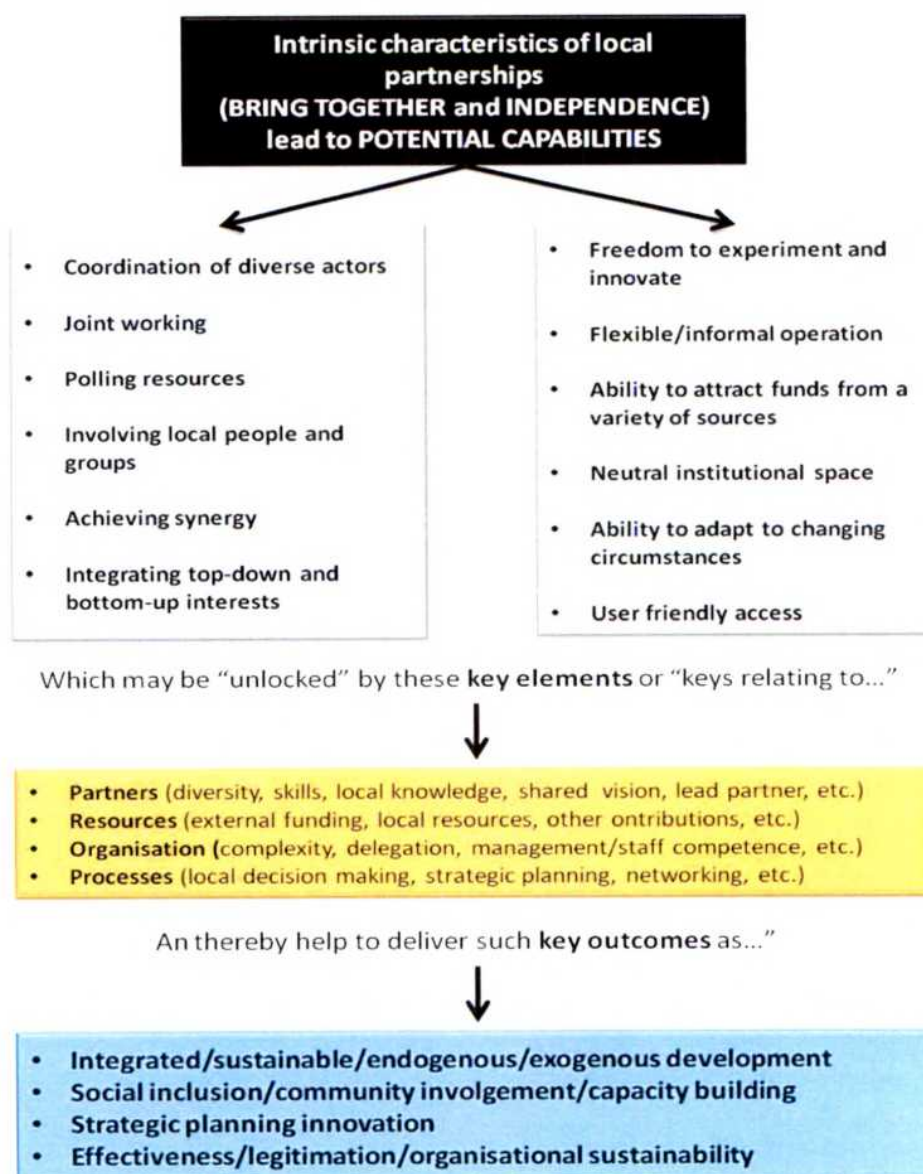


Fig. 1. How partnerships add value to development processes

Source: Own elaboration from PRIDE Final Report (2001)

4. VET partnerships as integration tools for local governance: defining a vision

The general scenario of VET policies is characterised by increasing complexity (globalisation trends, sustainable development needs, etc.) that demands better governance of employment through anticipation (planning) and consensus (participation and involvement of different stakeholders). Due

to the complex scenario stemming from globalisation trends, a strategy should be designed to ensure the feasibility and relevance of partnership work, to increase its potential, improve its efficiency, and enhance the benefits. Local VET partnerships represent relevant integration tools to improve decision-making. However, to achieve this role effectively, it is necessary to improve the organisation of partnerships, through a scheme of evaluation such as the one proposed in Figure 2.

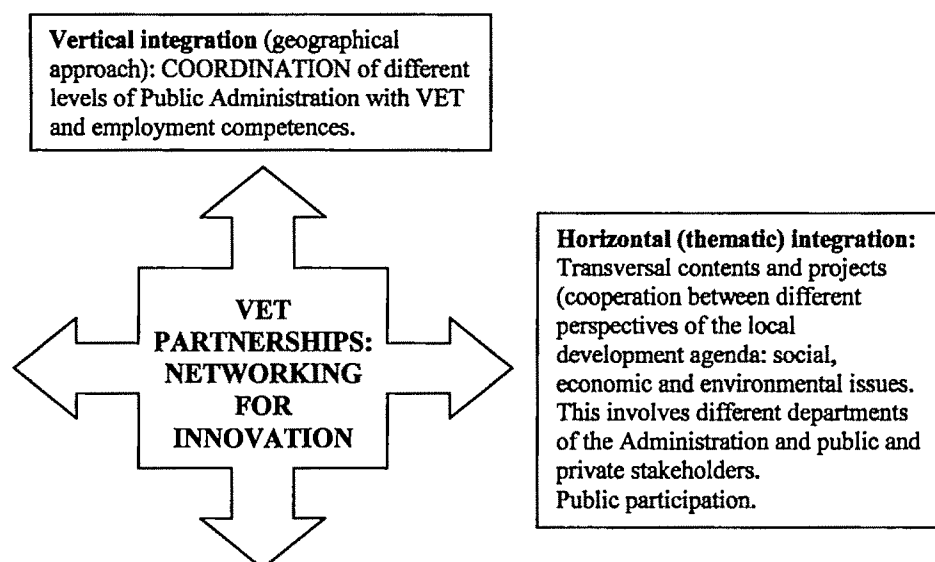


Fig. 2. VET partnership as an integration tool for local governance

Source: Own elaboration

This model is guided by a double objective: on the one hand, principles of governance, i.e. anticipation through strategic planning and social consensus through civil participation; on the other hand, a sustainability approach, i.e. multilevel coordination, territorial vision and transversal integration of social, economic and environmental policies.

Thus, the process of designing of (or the re-thinking) of the partnership must consider the operative integration of the different types of the relevant partner involved in the design and implementation of VET, and employment policies at local level. This question highlights the contribution of partnerships to local governance, in fostering local cooperation between actors and through strategic planning exercises:

- Increased cohesion clarifies objectives, which allows the identification of common interests.
- The process of designing the partnership provides an opportunity to re-define the role of social partners in relation to the objectives pursued.
- Re-negotiation of the policy framework with the government may be appropriate when social partners are responsible for a policy sector related to the VET.

- Through negotiations over the policy framework, social partners may also be asked to broaden their activities (Table 3).

Regarding the multilevel approach, interfaces facilitate the development of activities which meet the interests of various agencies. Under certain conditions, local programming exercises have been translated into bottom-up policies. Vertical co-ordination has thereby been improved. The involvement of community-based organisations has been translated into useful contributions to policy implementation. Partnership organisations have widened their scope of policy concerns and linked up externally with other agencies promoting local coordination.

It is useful to identify, involve and give priority to these partners within a long-term strategy. Experience indicates that these partnerships show a greater potential for policy co-ordination and adaptation to local conditions and have greater effectiveness. Separate policy frameworks, networks and service structures have co-existed, but limit the capacity to share methods and skills, to co-ordinate actions and to pursue objectives in partnership using common resources.

Despite the diversity of particular situations, common features can be identified as key aspects for a partnership (see Table 4).

Table 3. Checklist for an effective initiation of a VET partnership

ASPECT	
1. Name	
2. Tentative initial date	
3. Territorial scope (E.g. Local /regional /national)	
4. Type and diversity of members:	
4.1. Territorial integration: Are national, regional and local administration represented?	
4.2. Areas of integration: education, employment, social affairs, development, environment..?	
4.3. Inter-sectoral integration: different productive sectors?	
4.4. Is civil society involved? Social-based groups? Private initiative?	
5. Legal form and statutes:	
5.1. What is the legal form? (E.g. association)	
5.2. Are there different levels of involvement (responsibilities and rights) for partners?	
6. Objectives:	
6.1. Description. What are the main objectives?	
6.2. Are we linking social and economic development?	
7. Function and services:	
7.1. Description.	
7.2. Are we developing the following questions about VET and Lifelong Learning?: (i) institutional sensitisation and training; (ii) research projects (innovation); (iii) knowledge management diagnosis (questionnaires and database); (iv) fund rising actions; (v) evaluation of impacts (observatory); (vi) cooperative programs and projects	
8. Resources and tools:	
8.1. Description of: annual budget, human resources, office and infrastructure.	
9. Administrative structure:	
9.1. Description of structure: (i) how does the leadership work?; (ii) how relevant is the manager profile?; (iii) how does coordination between departments work?	
10. Strategic planning:	
10.1. Do we have a document with guidelines and objectives?	
10.2. Do we have indicators to evaluate and monitor impact?	
11. Participation of the social based groups in the partnership:	
11.1. Is any social marketing action being developed?	
11.2. What is the role of community-based groups and the target group?	

Source: Own elaboration

Table 4. Key aspects in the design, constitution and implementation of a local partnership

ASPECT	COMMENTS
Leadership, bottom-up approach, local empowerment	VET partnerships are structures promoting the role of local actors in employment, according to the European Employment Strategy.
Territorial cooperation and multi-level coordination	The need to coordinate the different levels of Public Administration with employment competencies (i.e. national and regional level) means the development of different, compatible logistics and bureaucratic routines.
The VET partnership as a multi-service and multi-function structure	Training, research, coordination, innovation, planning, animation and sensitisation... are some key services for a VET partnership. The diversity of work contents includes, according to the European Employment Strategy, the improvement of employability, promotion of entrepreneurship, increase and stimulation of equal opportunities, identification of emergent sectors for local labour market, and identification of the particular needs of rural areas.
Promote participation of private sector and NGOs	Public participation is fundamental because of the need for broadening and deepening the range of social partners and the inclusion of the private sector. The representativeness of the stakeholders is another critical issue.
Consensus	The promotion of a wider consensus and the definition of a common vision for the future is essential to the planning process. The development of studies, diagnosis and research tools is important in this regard.
Strategic planning. Operative guidelines	It is necessary to structure an integrated strategy through concrete programs and actions that are consistent and accurate. Knowledge management for anticipation: to identify conflicts and long term tendencies, improving information about the local labour market and VET supply and demand. Transversal contents scheme (according to the different topics included in the European Employment Strategy)
Action plan. Resources and budget	Fund-raising and executive management roles are two essential aspects for an operative VET partnership, in order to guarantee its economic sustainability.
Monitoring	Indicators for measuring impacts and evaluation.

Source: Own elaboration

5. Lessons learned on the role of VET partnerships

The potential benefits of local VET partnerships are frequently offset by a number of factors and circumstances relating to the degree and extent of integration of local actors, the overall long-term aim of the cooperation process, the degree of success in the construction of a “neutral institutional space”, etc. The experience of VET partnerships highlights the relevance of certain topics: the weak co-ordination of objectives between different levels of Public Administration, a lack of interest in a partnership framework directed at specific policy objectives and a weak accountability framework, amongst others.

The evidence found in the literature and the empirical work of the author in two European projects during the first decade of the 21st century provide lessons relating to the role of VET partnerships in local development processes.

The “true” reasons for local cooperation. In most cases, local PPPs respond to a call or external opportunity and VET partnerships are not an exception. One of the key elements that constrains the process of formation and consolidation of VET partnerships is the availability of external funds. The long-term sustainability of cooperation is compromised when the reason for cooperating is mainly linked to a funding opportunity. However, in the context of little or no prior cooperation, such incentives can lay the grounds for long-term cooperation, as long as the benefits are clearly perceived and valued by partners (Fig. 3).

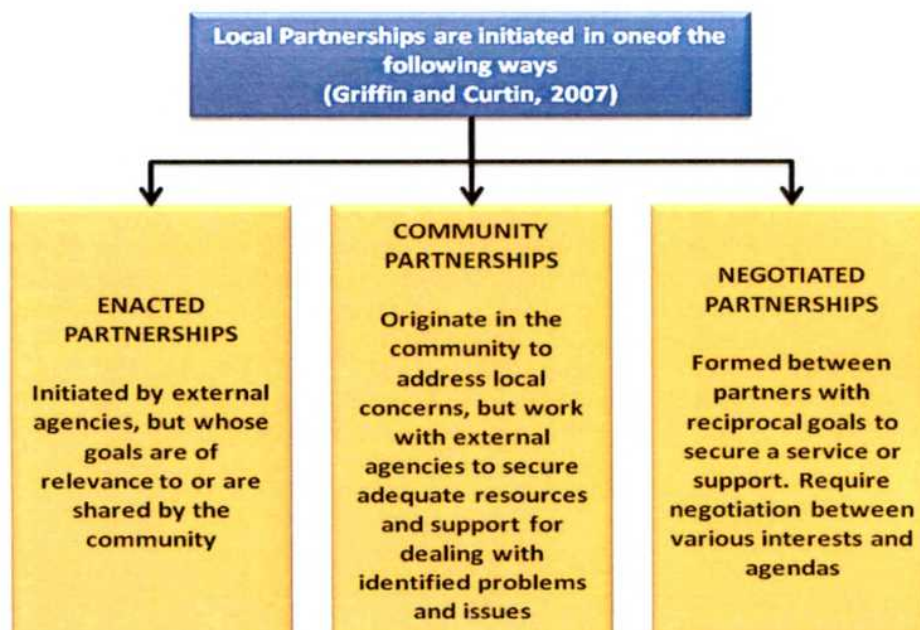


Fig. 3. Ways of initiation of local partnerships

Source: Own elaboration, adapted from Griffin and Curtin (2007)

Local Leadership and bottom-up approach. VET partnerships are structures that initiate the role of local actors in the promotion of employment, according to the European Employment Strategy. A clear and strong public aim is fundamental in providing credibility to the project. Local authori-

ties, due to their essential responsibility in decision-making, have the greatest role and responsibility for bringing together the various components of local society. However, this role, whilst positive in the initial stages, tends to remain equally powerful later, sometimes reflecting excessive control over deci-

sion-making. For local authorities, there is a risk in being “always necessary” and convinced that they alone should always guide the process.

Networking and administrative cooperation. One of the main weaknesses of traditional governance is the low degree of coordination between the different levels of Public Administration with employment responsibilities (i.e. national and regional level). As a consequence, there is a strong chance of overlapping or even contradictory actions coming from different departments within the same administration or different levels of government. VET partnerships can help increase action coordination by bringing together decision makers from different departments and levels of government.

Project management and fund-raising. The VET partnership is a multi-service and multi-function structure. Training, research, coordination, innovation, planning, animation and involvement are some of its key services. Therefore, it is essential to develop a fund-raising strategy that ensures long-term sustainability. Depending on the legal status and the philosophy behind the cooperation process, the VET partnership may have access to the following types of funding source: contributions of partners, existing programmes that match the strategic objectives of the partnership, and development of products and services.

Strategic vision, dialogue and participation. Transparency in decision-making and public participation is essential to legitimate the partnership. The overall culture of democracy and the representativeness of the stakeholders are critical issues. The promotion of a wider consensus and the definition of a common vision of the future are fundamental to the long-term planning process. It is essential to structure an integrated strategy through concrete programmes and actions. This must be linked to a realistic budget. Fund-raising and executive management roles are essential aspects to guarantee economic sustainability.

Monitoring and social marketing. It is necessary to provide indicators to measure the partnership impact and to allow for a project evaluation. A communication strategy is also necessary to provide information about results, to sensitise the population and to make visible the impact of the strategy.

The lessons above are developed into recommendations and guidelines in the next section.

6. Recommendations and guidelines for the effective delivery of outcomes by local VET partnership

Whatever the configuration and operational mechanisms of a VET partnership, its ultimate aim is the improvement of VET mechanisms that should, in turn, contribute to a better adjustment between workers' skills and qualification, and the needs of the labour market. The main reason for creating a VET partnership is to achieve beneficial effects for local society and territory. The enormous effort, in terms of human and material resources invested in the process of the creation and the daily operation of local partnerships, makes sense only when positive results are perceived and obtained.

This section discusses the main outcomes that local VET partnerships try to achieve. For each of these outcomes, main key factors are identified.

6.1. Adequate integration of the VET community in the partnership

VET works with various groups and institutions with differing scopes of reference that must be properly integrated into the partnership. This involves matching the appropriate representatives in each case, informing them of the partnership objectives, achieving mutual consensus about goals, objectives and implementation of procedures leading to the achievement of shared objectives.

The main factors determining adequate integration of the VET community in the partnership are: first, location of the appropriate representatives of each VET stakeholder (those having meaningful representation); second, establishment of the aims of stakeholders in relation to their participation in the partnership (determination of legitimate representatives, contributions to the objectives of the partnership in terms of human, financial and material resources, etc.); third, consensual definition of the goal, objectives and actions; and fourth, agreement on a procedure towards the achievement of shared objectives.

6.2. Legitimated governance model

One of the main advantages of partnerships when compared to other modes of organisation is their greater ability to legitimately represent the interests and concerns of stakeholders. Partnerships have the benefit of being able to integrate successfully a greater number of viewpoints than most other organisations. Unfortunately, a sizeable proportion of partnerships do not capitalise on this potential. The reasons are varied but one stands out. Many partnerships have tended to mirror an existing local balance of power and, sometimes, to follow the same logic of partisanship. In this way, they can soon become a “sounding board” for the existing balance of forces and political relationships in the area. Sometimes partnerships are controlled by the most influential or active groups. They do not always follow those capable of better quality leadership. In fact, leading personalities and groups are frequently excluded when they do not hold a formalised representative position. In many cases, members of decision-making bodies within a partnership “forget” that they are representing a group and end up not “accounting” for the decisions made and the positions taken. Mechanisms for participation often do not work or are not effective.

To overcome these problems, a number of factors can contribute to the achievement of a more legitimate governance model by VET partnerships: first, a high degree of heterogeneity and representation which allows more legitimated decisions and greater integration of existing views about VET into the development strategy; second, bottom-up initiation of partnerships showing shared concerns about sector problems and the need for common action; third, sufficient local decision-making capacity to exploit the advantages afforded by the knowledge of the sector and the joint action of local actors; and fourth, creation of an institutional, social, economic and political “neutral space”, avoiding a tendency to reproduce the balance of political forces and, sometimes, the same logic of partisan discussion.

6.3. Tailor-made VET strategy

This is one of the most important factors in relation to the cooperation process. It constitutes a “road-

map” for action and is the most appropriate tool to design a development strategy capable of responding effectively to needs, goals and actions.

Strategic thinking is still weak in most cases, although the need for cooperation is beginning to internalise in some areas, as a necessary element to obtaining benefits (funding, more effective action, projects above local level, coordination, etc.). Certainly, the need to build a development strategy began to arise as a result of local cooperation itself. However, it should be noted that often the design of a development strategy is closely tied to the specific requirements of a funding programme that feeds the local VET partnership. Therefore, only a small percentage of local partnerships undertake strategic thinking, grounded in local participation, to achieve their goals.

The key factors determining the achievement of strategic development by VET partnerships are: (i) there is a clear awareness amongst society and partners “that common action can bring benefits to the VET sector”; (ii) this leads to action within a society, especially amongst members of the VET partnership; (iii) partners are able to channel these desires for change, leading to a participatory process that integrates VET stakeholders; (iv) VET partnership is able to conduct the entire process, including the design of a VET strategy; and (v) VET partnership is capable of maintaining the involvement of local society and its key actors during the development and implementation of the VET strategy.

6.4. Adequate integration of VET actions in the local development strategy

Although VET partnerships promote the development of projects and actions in different economic and social sectors of the local system, their action is still far from integrated. This means wasting the benefits of synergies and “multiplier effects” resulting from possible working relationships between different development actions. Two requirements are fundamental to achieving integrated development: on the one hand, the integration of action that promotes a VET partnership within a development strategy; on the other hand, the integration of action that promotes the VET partnership with local policies and programmes.

The most important factors determining the achievement of integrated development by VET partnerships are: (i) representativeness in the composition of the local partnership, which allows greater integration of VET actions into the development strategy; (ii) bottom-up initiation of partnerships showing shared concern about local problems and the need for common action; (iii) understanding of and consensus about the basic problems for which action must be taken; and (iv) presence of leaders (individuals or organisations).

6.5. Permanent observation of the VET context

One of the most valuable tools in guiding the action of the VET partnership is the establishment of an observatory of the local VET reality. Its purpose is the continuous analysis of the situation of the labour market, the characteristics of vocational training offered in the area and the training profiles of the local workforce. These and other parameters will enable better guidance of VET policies. The observatory must have a team qualified in socio-economic analysis and must be functionally and/or legally dependent upon the institution that leads the cooperation process, i.e. usually a town hall. The main factors determining the achievement of permanent observation of the VET context are: (i) creation of a VET observatory; (ii) generation of a periodic reporting and dissemination strategy; (iii) discussion of the results of the partnership with stakeholders; and (iv) integration of results in the VET strategy.

6.6. Innovation

Innovation is often a key outcome from VET partnerships which benefit from fresh thinking, enthusiastic members and their relative independence from administrative controls. Innovation requires the existence or development of appropriate communication channels and networks, both within the partnership and between the partnership and the different local groups. The main factors determining the achievement of innovation by VET partnerships are: (i) creation of a clear structure with effective communication protocols between bodies,

staff and partners; (ii) creation of a communication and dissemination strategy aimed at the local society; (iii) interest in promoting R+D+I in relation to the practice of the VET partnership – creation of a formalised R&D structure; and (iv) integration of VET networks with other territories.

6.7. Capacity building

The establishment of a local VET partnership constitutes a good opportunity for the consolidation of development centres with specialised technical staff. Similarly, the establishment of local partnerships has led to the introduction of new administration, new ways of conducting relationships between local actors, and even changes in attitudes and mentalities, all of which have many beneficial effects. All these elements are the highlights of a new learning process and capacity building that has been developed as a direct result of partnerships. It would be no exaggeration to say that, beyond the financial investment achieved by partnership actions, the implementation of these other processes is the real benefit for long-term, sustainable development. The key factors determining the achievement of capacity building by VET partnerships are: (i) the development of cooperation networks between the partnership and local society; (ii) identification of local problems or coping with an appropriate strategy; (iii) members of partnerships hold leadership skills and exercise leadership within local society; (iv) high degree of heterogeneity and representation within the composition of the partnership allowing greater integration of existing views about VET into the development strategy; and (v) joint planning and strategic development process through mechanisms of negotiation and social dialogue.

6.8. Local development

VET partnerships promote local endogenous development in two ways: first, by providing the most appropriate institutional framework for local cooperation and the utilisation of local human resources; secondly, by closing the gaps between the skills available in the local context and the strategic needs of businesses and organisations. Endogenous de-

velopment is, therefore, one of the most important matters to be enhanced by VET partnerships. The key factors determining the achievement of local, endogenous development by VET partnerships are: (i) VET partnerships are initiated and established locally (bottom up), responding to widespread concern about common problems and the need to come together to address them or to take advantage of certain opportunities; (ii) partners must be able to adequately identify the object of cooperation, for which it is essential to have a thorough knowledge of the territory and local society; (iii) partners must have the ability to design an appropriate development strategy to address the problems and identified requirements; (iv) there must be a minimum background in local society, in terms of human and material resources that can form the basis for the development process (critical mass); and (v) local decision capacity must be sufficient to exploit the advantages afforded by the knowledge of the territory and the joint action of local actors.

7. A “nine-month roadmap” to an effective initiation or improvement of a local VET partnership

The final section of this paper presents a nine-month work plan and a schedule of activities for the design and implementation of a VET partnership. The work plan is structured into three consecutive periods or “quarters”, each identified by its main purpose and most important activities.

The first quarter: designing and starting the VET partnership. During the first quarter, the process focuses on the following activities: (i) definition of the aim, goal and main objectives of the partnership that must guide its action, taking into account the motivations that have initiated the need for cooperation; (ii) definition and resolution of the legal status of the partnership (i.e. non-profit organisation, consortium, association, etc.); (iii) decision on the composition and structures of the partnership; (iv) funding model; and (v) staff recruitment according to the needs foreseen in relation to the aim and objectives of the partnership and the availability of funding.

An initial technical proposal is required to initiate these actions. Its contents include the definition of the partnership mission, its specific objectives (priorities) and the proposal for developing services. The definition of the technical staff (one manager and two technicians as a proposed minimum) is essential to initiate this first step.

The expected outputs and results of this first quarter are: (i) a formal partnership structure; (ii) an operative manager and technical working group; (iii) an Initiation or Starting Plan, including a description and the organisation of the necessary immediate actions; (iv) a calendar showing the relevant timescale for proposals that match one or several of the general objectives of the partnership; (v) a work plan aimed at defining a diagnostic for the VET for the scope and territory of action (to be developed in the second quarter), which should include contents definition, information sources and priorities; and (vi) a Marketing and Communication Plan (to be implemented during the second and third quarters), which includes any action to disseminate and market the activities of the partnership. Usually this includes details of expected visits, interviews and the organisation of a local workshop.

The second quarter: strategic planning and action plan. During the second quarter, the process focuses on the following activities: (i) defining a vision of the main VET conflicts and opportunities within the territory to prepare a mid-term strategy; (ii) drafting a proposed Action Plan, including strategic guidelines, programmes and concrete projects; and (iii) establishing a methodology – compilation of previous documents, reports and background information, identifying information gaps and knowledge, conducting workshops and in-depth interviews and designing questionnaires.

The expected output and results of this second quarter are the preparation and submission of project proposals.

The third quarter: implementation of a local workshop around the VET strategy. During the third quarter, the process focuses on the organisation of a public conference about the partnership work plan and social debate. The expected output and result consist of feedback for the strategy: social consensus and animation, institutional communication and identification of priorities.

Although the EU initiative allowed to generalise local PPP figure for more than 20 years, the success of the implementation is different depending on the prior history of territorial and social context in which implantation occurred. This does not undermine a formula with notable advantages and guarantees of success if take care of components in a public policy management more complex and, in time, more powerful. It aims, rather, to the need to further analyse the performance of the local PPP and weaknesses observed in its operation in order to identify areas for improvement and to enhance the points already noted for their strength and good work.

8. Conclusion and discussion

The public-private partnership approach for the design and implementation of the strategy of Vocational Education and Training (VET) proposes a new joint management system within the context of the new territorial governance. In this paper, the main contributions of local PPPs to the design and implementation of public policies have been highlighted. These are, among other, the ability to procure more effective, efficient, relevant and legitimized policies and initiatives. The extent to which local PPP can operate according to its inspiring principles (consensus, strategic, real cooperation, integrated view of development, open participation, etc.) will determine the real impact of the advantages listed above.

However, neither local PPPs are chosen as a way to manage public policies, nor in all the territories in which local PPP is selected, it operates according to the good practice principles described. Many local societies maintain traditional forms of public policy management that are less open to participation. This is the evidence of immature contexts from the point of view of democracy, where common good and real cooperation are not among the first priorities of local actors who have the power to make decisions. This is the case of the countries of southern Europe and most of the New Member States, where clientelism and little democratic tradition combine to impose significant challenges to developing the potential of the local PPP.

Although the initiative of the European Union has allowed for the generalisation of local PPPs for

more than 20 years now, the success in implementation is different depending on the prior history and social context of the place in which it occurred. This does not undermine a formula that has notable advantages and guarantees of success if the key factors of a more complex but more powerful public policy management system are taken good care. It points to the need to further analyse the performance of the local PPP and the weaknesses observed in its operation in order to identify areas for improvement and to enhance the factors already noted for their strength and good work.

Note

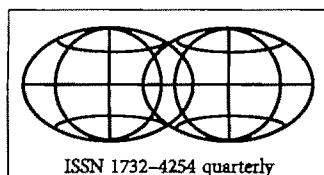
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The timeshare industry of Africa: a study in tourism geography

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Abstract. Within the broad spectrum of tourism accommodation the timeshare industry is a distinctive segment which has attracted only limited research work. This paper represents a contribution to tourism geography as it investigates the location of timeshare resorts in Africa and comparative position of African destinations in the global timeshare economy. The analysis shows the timeshare resort industry in South Africa is the most significant on the continent and is distinctive in its reliance upon domestic rather than international tourists. In terms of the distribution of resorts the key locational consideration in Africa parallels that found in other parts of the world, namely the positioning of resorts in areas of high natural amenity. In the African context this has meant clustering resorts in coastal beach areas and attractive mountain locations, as well as in the areas which afford opportunities for timeshare consumers to experience the African bush. Finally, of note in South Africa is the growth of large timeshare property developments at casino resorts, a development which parallels the experience of certain timeshare developments in the USA.

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1. Introduction

Clegg and Essex (2000) as well as Timothy and Teye (2009), among several writers, draw attention to the central role of the accommodation sector within the tourism industry. For tourism geographers there is a challenge to deepen research for understanding the evolution, workings and organisation of the accommodation sector as part of the tourism economy. In the international context the accommodation sector is attracting a growing volume of research which is differentiated by the existence of different segments of accommodation. Specific and distinct areas of scholarship and debate have arisen, for example, in the international context around different forms of accommodation and their role in international, national and local tourism systems (Timothy, Teye, 2009). For instance, the hotel sector was a critical focus of attention for certain researchers (Rogerson, 2010, 2011a, 2011b; Rogerson, Kotze, 2011; Rogerson, 2013). Other work opens up debates around small-scale forms of accommodation, such as bed and breakfasts or guest houses, research on second homes tourism, or in the African context of the distinctiveness of the safari lodge.

Tourism geographers contribute increasingly to this literature on the accommodation sector, including the research on the supply-side or locational aspects of different forms of accommodation (see e.g. Hoogendoorn, Visser, 2010a, 2010b; Ioannides, Timothy, 2010; Baker, Mearns, 2011; Hoogendoorn, Visser, 2011; Rogerson, 2013). The focus here is upon a neglected aspect of the accommodation spectrum, namely that of the timeshare industry. Timeshare, or shared vacation ownership, as it is increasingly

known, occupies a unique position within the accommodation spectrum (Sharma, Chowdhary, 2012). Not only is the product unique (Sharma, Chowdhary, 2012), highly specialised (Scavo Esq., 1999) and dynamic in its evolution (Pryce, 2002), but also timeshare represents an approach to leisure accommodation, marketing, sales and resort development that has changed significantly the overall nature and structure of the lodging industry (Upchurch, Lashley, 2006). From a tourism-geographical perspective, this paper analyses the position of the timeshare industry of Africa within the global industry of timeshare and the current spatial distribution of timeshare developments in Africa. Special focus is upon South Africa, the leading focus for the timeshare industry in Africa. Methodologically, the paper draws from a range of different sources. These include primary interviews with key stakeholders involved in the development of timeshare resorts in Africa, analysis of websites of leading timeshare companies and an examination of industry reports.

2. Situating the timeshare industry

The timeshare industry represents a distinctive segment within the broad spectrum of tourism accommodation (Hawkins, 1985; Terry, 1994a, 1994b; Upchurch, Lashley, 2006; Brey et al., 2007; Powanga, Powanga, 2008; Timothy, Teye, 2009; Cortes-Jimenez et al., 2012). Timeshare is sometimes referred to as vacation ownership or interval ownership (Ioannides, Timothy, 2010). Upchurch and Lashley (2006) argue that timeshare or vacation ownership is a relatively recent leisure phenomenon and an addition to the existing forms of tourism accommodation.

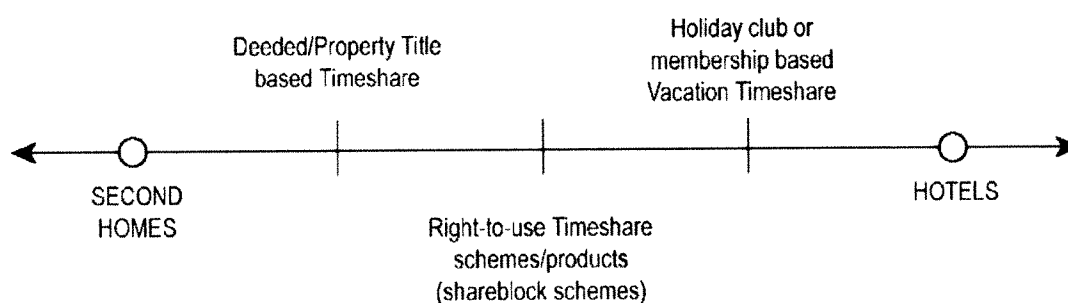


Fig. 1. Accommodation spectrum and property timeshare

Source: Authors' work

Within a spectrum of forms of accommodation, different forms of timeshare occupy an intermediary position between second homes and hotels (Fig. 1). Although its definition is contested, the term “timeshare” refers essentially to the practice of dividing accommodation units into (usually) weekly increments or intervals and selling them to consumers (Zacharatos, Stavrinoudis, 2009; Huang et al., 2010a, 2010b). Hahm et al. (2007: 223) consider timeshare as “the right to purchase a specific time period in which a purchaser can use a unit within the timeshare resort at a geographical location of choice”. For Bakic et al. (2012: 18) the “main feature of the timeshare product is to ensure various consumers to own the capacities which in regular conditions, according to their income, they would not be able to afford”. The timeshare segment is widely considered one of the most rapidly growing segments of the global tourism economy (Hahm et al., 2007; Sharma, Chowdhary, 2012). Hitchcock (2001: 230) observes timeshare “is becoming ever more integrated part of the ‘mainstream’ holiday market”.

Despite the rise in importance of timeshare internationally, this segment of tourism accommodation has not attracted the amount of detailed scholarly attention that has been given to other forms of tourism accommodation, such as bed and breakfasts, second homes or hotels. Stringam (2010: 38) observes that research on timeshare and vacation ownership is “sparse” and adds that the majority of existing writings are undertaken from the perspective of marketing rather than tourism. Likewise, Huang et al. (2010a: 15) assert that “existing scholarly literature on timeshare is mostly from the perspectives of marketing or real estate development”. Thematically, the strongest foci in academic research on timeshare surround the issues of marketing, consumer behaviour and the management of timeshare operations. The majority of writings reflect a marketing or hospitality management perspective with few contributions deriving from a tourism perspective and examining the development of timeshare as part of the tourism economy of particular countries. Overall et al. (2009: 2) point that “the main weakness of timeshare on an international level is its limited scientific investigation and its fragmentary study”. Further, they bemoan the fact that most scholarship “has been research funded by enterprises aiming at collecting specific

quantitative data concerning specific subjects pertaining to their business interests” (Zacharatos, Stavrinoudis, 2009: 2). In terms of location or spatial issues the existing timeshare writings are silent such that for tourism geographers the timeshare industry has been *terra incognitae*. The work of Timothy and Teye (2009) is noteworthy as the only available study to offer any discussion on the factors influencing the geographical patterns of timeshare resort development in particular countries, the USA being their example.

Looking at the existing volume of writings on timeshare it is not surprising to record that most academic material relates to timeshare developments and the industry in either North America or Western Europe, the two leading regions for timeshare in the world (Upchurch, Gruber, 2002; Upchurch, Lashley, 2006; Kaufman et al., 2011). Outside of these areas only a handful of studies have been undertaken on timeshare (Crotts, Ragatz, 1998). Few investigations are available for sub-Saharan Africa. Indeed, a number of recent reviews on tourism scholarship in Africa, including of works by tourism geographers, point to a gap in the knowledge concerning the timeshare industry (Rogerson, Rogerson, 2011; Rogerson, Visser, 2011; Visser, Hoogendoorn, 2011; Rogerson, 2012).

3. Location of the timeshare industry: Africa in the global economy

In one of the earliest academic contributions on the timeshare industry Terry (1994a) drew upon industry sources to portray a picture of the state of the timeshare industry on a global basis. In 1992 there was a recorded total of 3,050 timeshare resorts globally with an estimated 2.36 million owners, the majority of whom were residents of the country where the timeshare property was located. Of the global population of resort developments a total of 2,168 resorts or 71 percent were located in the United States or Europe, the two original heartlands for timeshare property development. The United States accounted for 44 percent of global resorts in 1992. The next most significant areas for timeshare resorts were Mexico (201 resorts), South Africa (135), the Caribbean (131) and South America

(115). In terms of residence of the timeshare owners once again the United States, with 1.41 million owners, were the most significant market, followed by Europe (424,000), Mexico (124,000), South Africa (120,000) and Canada (94,000).

One striking finding from Terry’s (1994a) global analysis was of the significance of Africa, in particular of South Africa, in the global marketplace of timeshare property development. It was observed that during the 1980s South Africa’s timeshare industry was acknowledged as one of the fastest growing timeshare destinations in the world. Since the 1990s, however, the industry has experienced a phase of consolidation at a time when other new international destinations for timeshare devel-

opment, particularly in North and South America, have been recording a rapid pace of expansion. The work of Pandey (2013) tracks the early development and evolution of the timeshare industry in South Africa, which catered almost exclusively for the domestic tourism market dominated by white South African leisure seekers. Indeed, it shows that the essential geography of the timeshare industry in South Africa was firmly established by 2002 when the last of the country’s major timeshare based accommodation developments was completed. By 2002 the growth of South Africa’s timeshare industry had reached its highpoint and in relative terms its position has been declining in the global league tables of timeshare development (Stocks, 2008; Pandey, 2013).

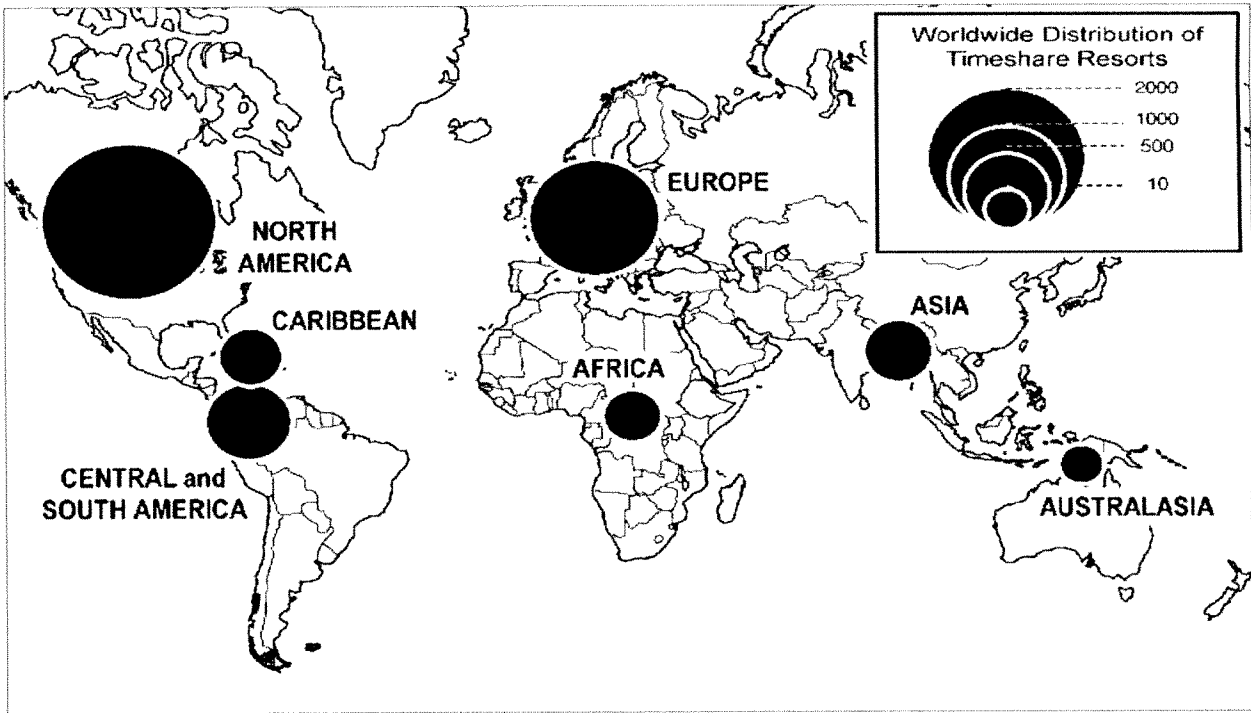


Fig. 2. International distribution of timeshare resorts, 2012
Source: Based on the data from AIF, 2012

Figure 2 provides a global profile of the geographical distribution of timeshare resorts in 2012. It is evident that North America and Europe continue to dominate the global timeshare industry followed by Central and South America, and the Caribbean. Outside of these regions Pacific Asia, including Australasia, has seen a growth in the number of timeshare developments in the region, especially in India and China. The continent of Africa represents now the smallest share of timeshare

resort development at the global scale. It is observed that the region of North America, the global heart of the timeshare industry, has an estimated 2,500 resorts alone, accounting for roughly 46% of all timeshare developments worldwide (AIF, 2012). Of this total, the largest share of timeshare resorts are in the USA, with extensive clusters in Florida, California, South Carolina and Hawaii. Florida hosts a total of 362 timeshare resorts or 23% of all timeshare developments in the United States, an amount of time-

share development which alone exceeds that of the entire South African industry, the largest focus of timeshare operations in Africa.

In terms of specific location, timeshare resorts in the USA are typically situated at beach locations, areas of natural beauty, and with golf courses, themes which are reflected also in the African experience. Another dimension of the location of timeshare resorts in the USA which replicates the European pattern is a close association with the development of

certain timeshare resorts linked to the skiing industry, a phenomenon that is not manifest in Africa. The rest of the timeshare resorts in the USA are distributed across a range of urban locations, casino resorts, and theme parks. Overall, the spatial patterns of the industry in the USA reflect the importance of resort development in the areas of high amenity; including those with favourable climates in relation to year-long resort occupancy (see Timothy, Teye, 2009).

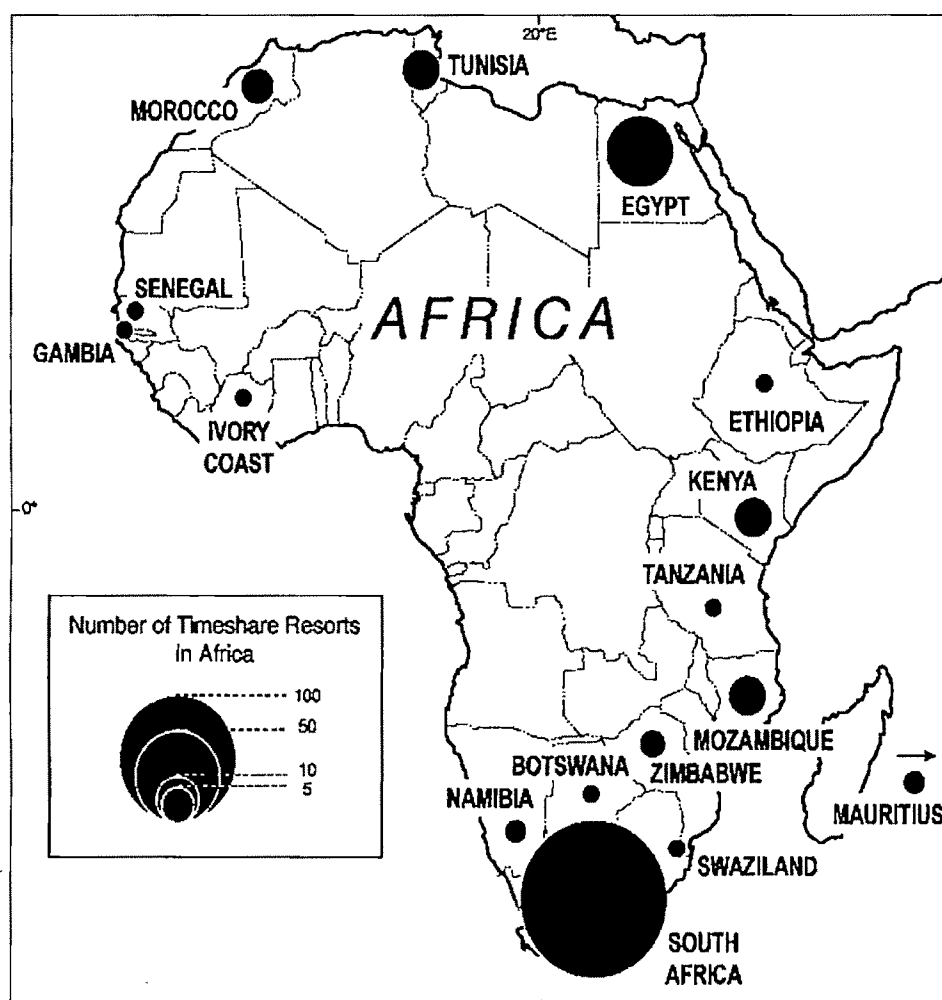


Fig. 3. Number of timeshare resorts in different African countries

Source: Based upon the data from the RCI and Interval International websites

Figure 3 unpacks the analysis at a country scale to reveal the total number of timeshare resort developments across different African countries for 2012 (RCI and Interval International websites). Although its global ranking fell between 1992 and 2012 it is evident that South Africa continues as the leading

focus for timeshare developments in Africa. The strong dominance of South Africa reflects the historical purchasing power of the mainly (white) domestic consumer market as well as macro-factors of the country's relative economic and political stability as compared to other African destinations (cf Mi-

halic et al., 2013). In terms of numbers of timeshare resorts, South Africa is followed by Egypt in second place and then by a group of countries which include Tunisia, Morocco, Kenya and Mozambique.

At a regional scale of analysis it can be observed that four concentrations or broad regional timeshare based clusters can be discerned to exist within the African continent. The first one is a northern cluster which encompasses Egypt, Tunisia and Morocco. The second one is a weak cluster in West Africa which includes the countries of Senegal, Gambia and Ivory Coast. The third one is the East African cluster encompassing Ethiopia, Kenya and Tanzania. Finally, there is the most important southern cluster which is dominated by the timeshare developments in South Africa. Beyond South Africa, however, the southern cluster incorporates a number of timeshare resorts in Botswana, Mozambique, Namibia, Mauritius, Zimbabwe and Swaziland. Collectively this southern cluster – with South Africa at its heart – contains a total of 183 timeshare resorts (Hatjigiannakis, 2012). In many ways the established patterns of timeshare development in this region mirror the broader tourist patterns in Southern Africa with South Africa forming the core regional tourist economy surrounded by the peripheral tourism economies of Swaziland, Mozambique, Zimbabwe, Botswana and Namibia (Rogerson, 2009).

In many countries of Southern Africa the evolution of timeshare has been linked to the specifically targeted South African market (Ragatz Associates, 2004; Grant Thornton, 2010). This is exemplified by the case of Botswana where Tuli Lodge, established in the 1980s, was a luxury bush timeshare development geared or established almost exclusively to cater for South Africa's potential timeshare consumer base. The Tuli Lodge development is noteworthy as at the time it represented one of the first timeshare developments away from coastal locations and seemingly the first timeshare based safari lodge of its kind anywhere in the world. The more recent emergence of Mauritius as a destination for timeshare development has also been primarily allied to a high end South African consumer market (Joubert, 2012).

It has been pointed out that the South African timeshare industry is distinguished by its historical anchor of domestic tourism. It is estimated that in South Africa the international timeshare own-

ership base only accounts for as little as 2% of the total weeks or units available, most of which are accounted for by regional purchasers (Grant Thornton, 2012). The operations of the international exchange groups of RCI and Interval International ensure, however, that South African timeshare is linked to global networks, albeit the industry is not dependent upon an international clientele. This situation is different from that in the rest of Africa where the domestic market for timeshare is often minimal and secondary to the dominance of international timeshare tourists (Bauermeister, 2012).

In case of the western, eastern and especially the northern timeshare clusters on the African continent, the linkages with international tourism are at the foundation of the timeshare operations in these areas. The role of the international exchange groups like RCI and Interval International is therefore vital to the functioning of these timeshare developments. The major market for international timeshare in these clusters is that of Western Europe, a pattern which reflects also the broader trends in long haul international tourism arrivals in these regions of the continent. In particular, the case of Egypt with a total of 31 timeshare developments, the second most significant country for timeshare developments, is explicable only in relation to its proximity and linkages to the European tourism market. Finally, in terms of contrasts between the southern timeshare clusters and those in the rest of the continent it should be noted that a web search of timeshare developments across Africa reveals that outside of the southern cluster all other timeshare development on the African continent are linked to hotel and resort based accommodation developments exclusively, which contrasts with the greater variation found in the spectrum of timeshare accommodation established in South Africa. The timeshare industry in South Africa enjoys the widest variety and types of timeshare accommodation products, from units located exclusively in hotels, bungalows, lodges, and mixed resort developments to holiday apartments and chalets.

Figure 4 provides more details on the location of timeshare resorts within Africa. The outstanding picture is of the massive dominance of timeshare resort developments at sea, sun and sand locations across the continent. More than two-thirds of South African timeshare developments are situated in coastal areas. With only a small number of

exceptions, timeshare resorts outside of South Africa and situated in other African countries are located in coastal centres, including the examples of Inhambane (Mozambique), Mombasa (Kenya), Malindi (Kenya), Sharm El Sheikh (Egypt) and Grand Baie (Mauritius). The most notable exception of

non-coastal timeshare development is a group of property developments in the Moroccan city of Marrakech. Beyond beach timeshare resort developments, other popular foci for timeshare developments in Africa are safari linked or bush locations as well as areas of natural beauty.

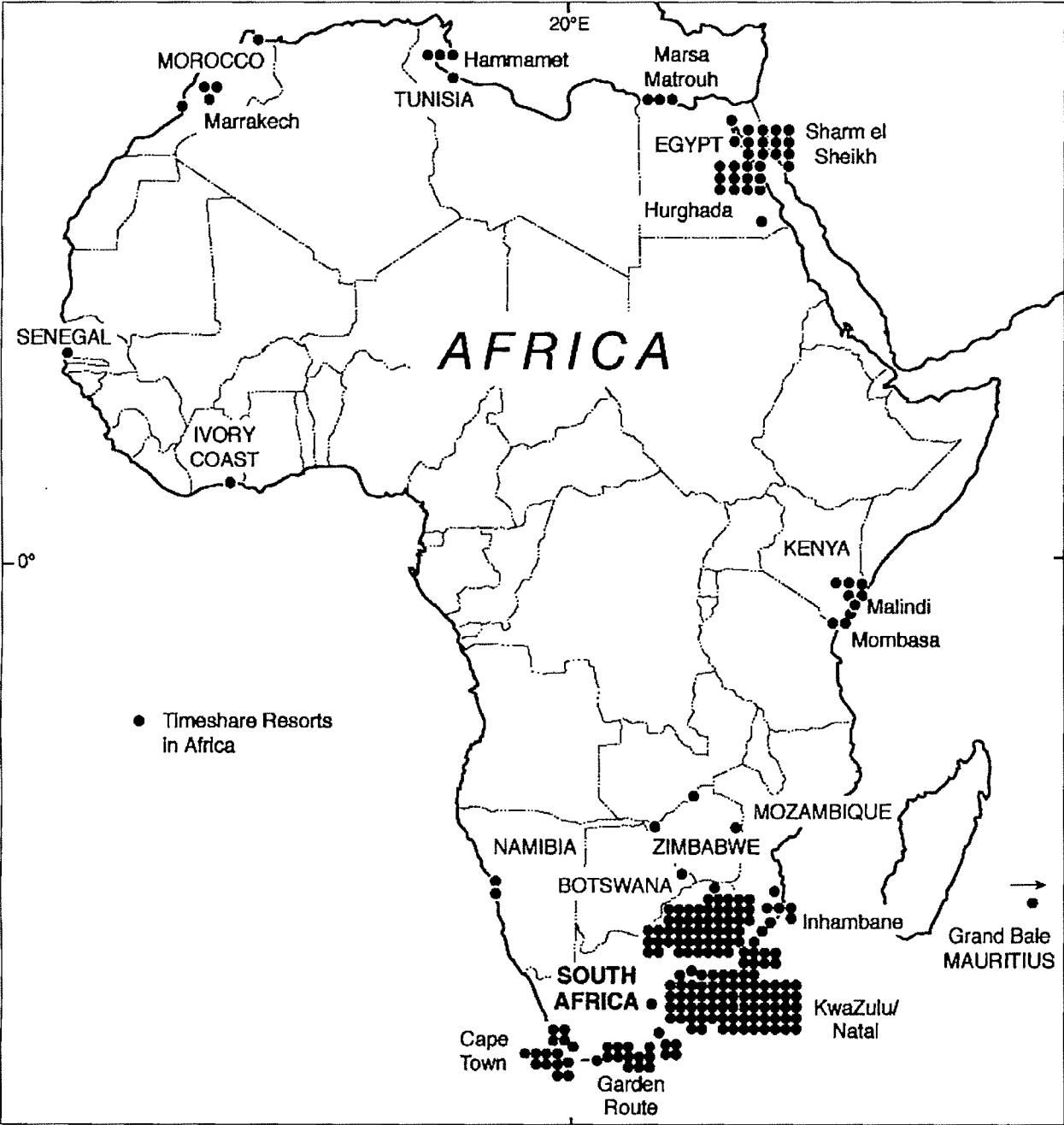


Fig. 4. Location of timeshare resort developments in Africa

Source: Based upon the data from the RCI and Interval International websites

The industry interviews disclosed a distinctive trajectory in the development of Zimbabwe's timeshare developments (Kennedy, 2012). The growth of

timeshare resorts there is linked to the country's international isolation and political unrest. With the exodus of white Zimbabweans from the country

due to political unrest much of their banked finances were frozen by the national government. A group of timeshare developers lobbied the national government to allow the release of such funds in order to specifically fund the purchase of timeshare at resorts in Zimbabwe. After the national reserve bank agreed to allow such purchases a number of white Zimbabweans expended their frozen funds on timeshare developments which were affiliated to international exchange organisations such as RCI. This action therefore facilitated their access to other resorts within the RCI network through the exchange network, in many cases without ever visiting their actual purchase resort in Zimbabwe. The timeshare resorts in Zimbabwe are mainly located in the areas of natural beauty, such as the Lokuthula Safari Lodge Resort Estate close to the iconic destination of Victoria Falls. Nevertheless, as funds from the frozen accounts are dwindling, the future of such Zimbabwe timeshare based accommodation developments is beginning to be questioned, especially with no clear consumer purchase base to target for future timeshare sales (Kennedy, 2012).

4. Geography of timeshare developments in South Africa

Finally, a discussion is presented on the contemporary geography of timeshare developments in South Africa. Figure 5 provides a profile of the location of timeshare developments in the country, using the country's nine provinces as the base. In terms of the contemporary geographical distribution of timeshare developments, the coastal province of KwaZulu-Natal enjoys the largest number of timeshare developments, with an estimated 43% of all the country's timeshare accommodation based developments. This is followed by the Western Cape with 19%, Mpumalanga with 11%, the Eastern Cape with 9%, Limpopo with 8%, Gauteng and the North West province with 4% each, and the Free State 2% share (Grant Thornton, 2012). It should be noted that no timeshare property developments currently exist in Northern Cape.

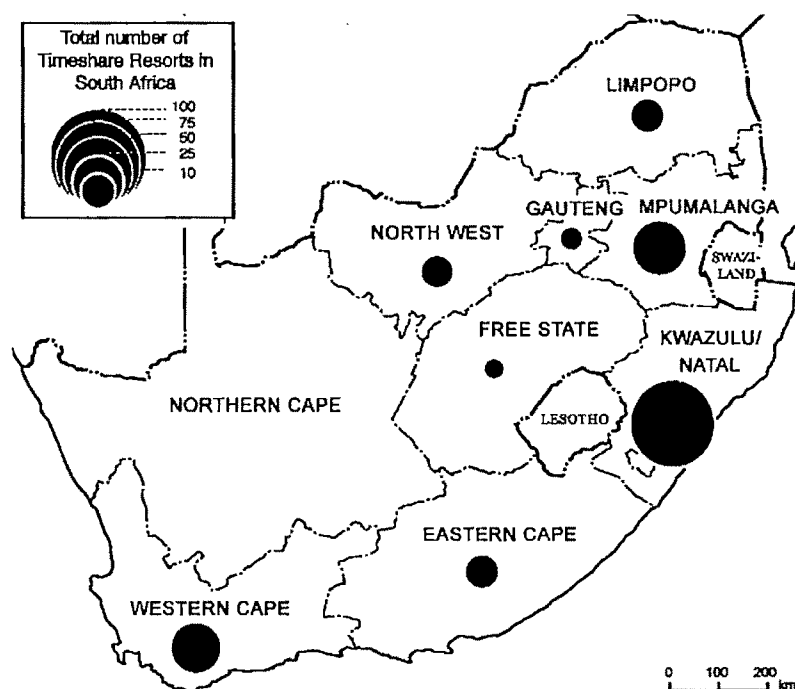


Fig. 5. Provincial distribution of timeshare accommodation in South Africa, 2012

Source: Based upon the data from the RCI and Interval International websites

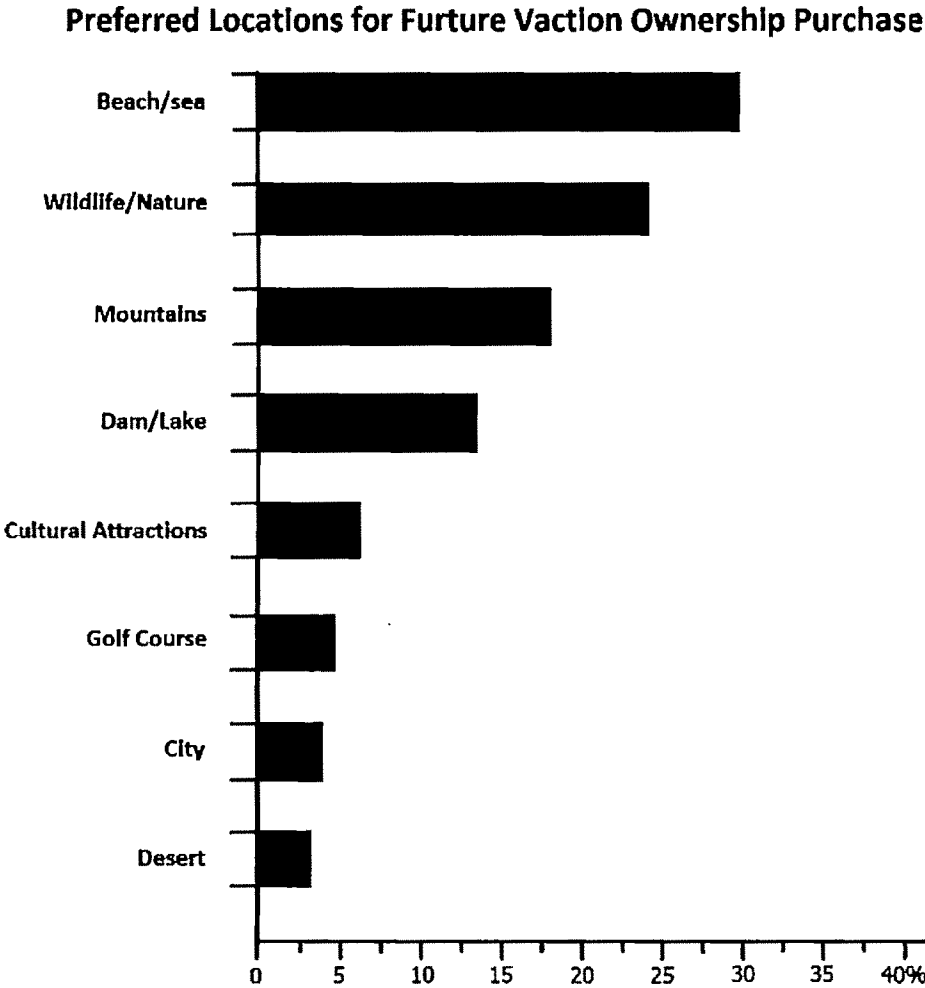


Fig. 6. Consumer preferences regarding the location of timeshare developments

Source: Grant Thornton, 2012: 75

The overall provincial distribution of timeshare developments is the result of the industry's evolution since the early 1980s with the major consumer market inland in the Gauteng economic heartland around Johannesburg and Pretoria seeking out beach locations for recreation and domestic holidays (Hatley, 1990; Pandey, 2013). The location preferences of consumers are disclosed from the findings of the South African Vacation Ownership Industry Survey (Grant Thornton, 2012). This is shown in Figure 6 and highlights the continued consumer preference for beach, bush/safari and mountain locations. In the global context, a strong preference for timeshare property development in bush or safari locations close to nature reserves is the most distinctive dimension of the location of timeshare resorts in South Africa. The groups of resorts which target consumer preferences for safari/bush experi-

ences are found in the areas of Mpumalanga close to Kruger National Park or the Pilanesberg (North West), and areas of outstanding natural beauty, such as the Drakensberg Mountains.

Outside these locations the most notable timeshare property development has been that around the Sun City casino and leisure complex in North West province. Since its establishment in the early 1980s Sun City has been recognised as the pre-eminent tourism resort in Africa (Kim et al., 2000). The timeshare developments are part of the broader Sun City resort complex which includes a combination of world-class hotels, a gaming complex, golf and game-viewing opportunities. It should be noted that, unlike the United States and other popular timeshare destinations, South Africa has few timeshare resorts that can be categorised as 'mega-destination complexes' or 'mega-resorts' which can

parallel, for example, those of Disneyland in Orlando, Florida (cf Ioannides, Timothy, 2010). More specifically, it is observed that less than 10 large timeshare based destination resorts are established in South Africa with the Sun City complex, the only resort that could be counted as a locally significant 'mega-resort' (Sayeed, 2012).

In the geography of South Africa's timeshare resorts, the Sun City complex is the largest development which currently exists in the country. The timeshare component of the resort initially offered a total of 234 units which was extended in the second phase of the development with the addition of a further 148 units, making a total of 382 units. This development includes 21,500 owners from phase one (sold off in split week intervals) and a further 13,600 owners in phase two (sold on a split week basis). This arrangement allows the owners to divide their time into a three- and four-day visit rather than an interval week. The post-1996 development of timeshare at the Sun City complex was popular and successful in its timeshare sales even at the time of overwhelming decline in sales in much of timeshare in the rest of South Africa. This large resort offers potential consumers a different recreational opportunity or potential experience to those which had been traditionally associated with the South African timeshare developments. In this case, the artificial or man-made resort itself became the centre of timeshare consumer's focus, rather the traditional market preference for timeshare involving a beach location or beautiful natural surroundings (Stocks, 2012). In addition to the establishment of the world class recreational facilities another critical success factor for this timeshare development is its geographical proximity to the South Africa's economic and consumer heartland, the major cities of Johannesburg and Pretoria (Kim et al., 2000).

5. Conclusion

The accommodation sector of the tourism industry has attracted only a relatively small volume of scholarship and analysis as is demonstrated by Timothy and Teye (2009). Timeshare accommodation is part of an array of different forms of accommodation which would include hotels, guest houses, bed and breakfast,

safari lodges, second homes, backpacker lodges and even extending to caravan parks. In the South African context, the works of both Visser and Hoogenboom (2011) and Pandey (2013) draw attention to the absence of local scholarship relating to the timeshare industry. More broadly, issues relating to timeshare development have not commanded much attention from tourism geographers so that understanding of the spatial aspects of timeshare is undeveloped.

This paper seeks to contribute to tourism geographical scholarship on the timeshare industry. An analysis of Africa in the global timeshare economy shows that in the early 1990s South Africa was ranked as the fourth most significant location for timeshare resort developments. Since the early 1990s the growth of new timeshare resort development in South Africa has slowed relative to other parts of the world. Nevertheless, it is revealed that the timeshare resort industry in South Africa remains the most significant on the continent. Arguably, the South African timeshare industry is distinctive within Africa in terms of its reliance upon domestic rather than international tourists. In terms of the spatial distribution of resorts the key locational factor in Africa parallels that found in other parts of the world, namely the positioning of resorts in areas of high natural amenity (cf Timothy, Teye, 2009). In the African context this has meant clustering resorts in coastal beach areas, attractive mountain areas, and around locations which afford opportunities for timeshare consumers to experience the African bush. Finally, of note in South Africa is the growth of large timeshare property developments at casino resorts, a development which parallels the experience of certain timeshare developments in the USA. Overall, this analysis demonstrates the distinctive nature of timeshare as an emergent form and aspect of tourism accommodation in Africa, the peripheral position of the continent in the global industry of timeshare, and South Africa's long-established role as the leading edge of the timeshare industry in Africa.

Acknowledgements

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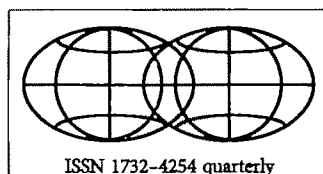
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The Upper-Silesian conurbation on the path towards the “Silesia” metropolis

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Abstract. In its methodological context, the article, expands on the idea of the organization of the “Silesia” superstructure. The idea of establishing a common urban organism emerged with the local governments of the Upper Silesian conurbation cities and was dictated by the need to find a way to change the traditional image of the Silesian region and its post-industrial role in the economic space of the country, as well as Europe. Therefore, in 2009, the Metropolitan Association of Upper-Silesia, an association for the initial institutionalization of “Silesia”, was registered, because “Silesia” does not hold any administrative or legal force. Such an organizational “revolution” of the Upper Silesian conurbation initiated a wide social debate, in which the arguments of both supporters and opponents of such an enterprise in the Silesian region became apparent, together with misunderstandings related to the term “metropolis”, and the idea of establishing “Silesia”. Representatives of local governments chose the more prestigious term “metropolis” as if a complex metropolisation had taken place in the Upper Silesian conurbation. It would be adequate, however, to look only for the first features of metropolitan functions in this de-industrialized and restructured region, which are going to shape the long-lasting metropolisation process under the influence of globalisation.

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1. Introduction

Metropolisation, metropolis and metropolitan area are commonly used terms to illustrate contemporary urbanization processes. The omnipresent and progressive globalisation of human activity leading to an increased spatial mobility of people, goods and capital, as well as the diffusion of ideas, technological innovations and cultural models influences the form and dynamics of urbanisation processes. These terms are used to describe new spatial phenomena. In order to avoid discrepancies and controversies, the definitions of these terms should be recalled. Metropolisation, known for a long time (ancient metropolises) and currently highly dynamised by globalisation, is probably a new phase of urbanization, since it differs in quantity and quality from the previous urbanization stages because:

- 1) the principle of hierarchical spatial organization is disappearing (according to Christaller),
- 2) the impact force of the "potential" of physical proximity of the centre is weakening,
- 3) network connections between remote metropolises are increasing (Jałowiecki, 2000).

As J. Turowski states, "metropolisation is a feature of contemporary urbanization, i.e. gaining a dominating significance in economy and culture of a given country by large complexes and structures of towns and various settlement units also referred to as agglomerations, together with their main centre – metropolitan city" (Szymańska, 2009).

Metropolisation of space is a peculiar reaction of the settlement system to the phenomenon of globalisation. It is, therefore, a complex process of shaping a new type of spatial structure due to the concentration in fragments in space of large cities (centres, regions), which:

- 1) gather the economic, financial, administrative, academic, cultural and media world potential;
- 2) concentrate the superior (managerial) functions in economy management on the supranational scale;

- 3) join the international structure of dependency, connections and cooperation, and the network of cities with metropolitan functions;
- 4) change the nature of the centre-periphery relationship, where, with the dominating role of the centre, a clear synergy of functional connections is taking place;
- 5) transform the use of urban and suburban space into a large and complex settlement system, frequently of polycentric character with unclear borders between the city and its suburban zone;
- 6) export the urban model shaped in metropolises (Markowski, Marszał, 2006; Jałowiecki, Szczepański, 2002).

The metropolis is the main component of the metropolitan area that shall be understood as the metropolitan settlement system (mono-centric or poly-centric) consisting of many settlement units and highly urbanized areas (Markowski, Marszał, 2006). According to S. Liszewski (2008), it is a form of a large urban agglomeration comprising two poles of diverse spatial and functional scale: 1) the centre, where metropolitan functions are concentrated, and 2) the external area, where metropolisation processes take place.

The research aim of this article is to highlight the process of metropolisation of the Upper-Silesia conurbation in its methodological context. Therefore, study aims to:

- 1) analyse the location of the Upper-Silesia conurbation in the typology of Polish metropolises;
- 2) present an attempt to empower the Upper-Silesian conurbation;
- 3) present the social perception of the "Silesia" enterprise;
- 4) monitor the emergence of metropolitan functions – their institutionalisation.

2. Materials

The empiric material for reconstructing the social regional discourse and the analysis of the institu-

tional base of the origin of metropolitan functions is, next to subject literature, statistics and cartographic material, as well as numerous articles in the regional press, regional radio broadcast and television programmes, and also the proceedings of meetings and conferences. Moreover, it has been complemented and revised by authorized websites.

The analysis of the metropolitan potential in the GOM has been made on the basis of the institutional basis identified with 11 institution categories, which were metropolitan features, determining the level of metropolisation (Table 1). A point-based evaluation has been applied, following Kaminski (1971), based on which the degree of centrality of cities has been calculated, taking into account the

presence of certain metropolitan features. These included: 1) embassies and consulates, 2) four- and five-star hotels, 3) sports events of international range, 4) international clothing stores, 5) exclusive car showrooms, 6) banks (headquarters, branches or local offices exceeding 10 in a city), 7) higher education, 8) technology parks, business incubators and innovation centres, 9) entertainment and sports institutions (entertainment parks – amusement parks, large shopping centres (1), aqua parks and golf courses), 10) hospitals and specialized clinics or rehabilitation institutes of national range, 11) motorway junctions (existing or in progress) and junctions of more important national roads and express-ways, as well as international airports.

Table 1. Metropolitan institutions in the cities of the GOM (Upper Silesian Metropolitan Area)

GOM Structure	Borough	1	2	3	4	5	6	7	8	9	10	11	Total of services/ /institutions	Total of C_j	The $C_{j\text{ index}}$	Metro-politan functions
Central metropolitan complex	Katowice	+	+	+	+	+	+	+	+	+	+	+	11	737	1.00	A
	Gliwice			+	+	+		+	+	+	+	+	8	482	0.65	B
	Chorzow		+				+	+	+	+	+		6	371	0.50	B
	Tychy		+				+			+	+	+	5	271	0.37	C
	Sosnowiec			+				+		+	+	+	5	265	0.36	C
	Zabrze					+		+		+	+	+	5	260	0.35	C
	Dabrowa Gornicza								+	+	+	+	4	171	0.23	D
	Ruda Slaska					+					+	+	3	144	0.20	D
	Myslowice				+						+	+	3	144	0.20	D
	Bytom								+		+	+	3	127	0.17	D
	Siemianowice Sl.								+	+			2	105	0.14	D
	Swietochlowice				+								1	78	0.11	D
	Piekary Slaskie									+		+	2	77	0.10	D
	Jaworzno										+		1	33	0.04	E
External metropolitan zone	Tarnowskie Gory								+	+	+		3	138	0.19	D
	Czeladz						+						1	78	0.11	D
	Bedzin											+	1	33	0.04	E
	Mikołow											+	1	33	0.04	E
TOTAL		1	3	3	4	4	4	5	6	10	12	12		65		
$C_{j\text{ INDEX}}$		94	83	83	78	78	78	72	61	44	33	33	$\sum_{j=1}^n C_j = 737$			

Explanation: 1 – Bank headquarters, 2 – Sports events of international range, 3 – Shops, salons of exclusive foreign brands, 4 – Embassies, consulates, 5 – Technology parks, business incubators, innovation centres, 6 – Hotels of ***** and ****, 7 – Exclusive car showrooms, 8 – Amusement parks, golf courses, operas, operettas, concert halls, 9 – Hospitals, Specialist Clinics, Supraregional health institutions, 10 – Colleges and universities, 11 – Existing motorway junctions or in progress, major express road junctions; A – very high degree of centrality (1.00–0.71), B – high degree of centrality (0.70–0.41), C – medium degree of centrality (0.40–0.31), D – low degree of centrality (0.30–0.11), E – lack of degree of centrality (<0.10)

Source: Zuzańska-Żyśko E. (2012)

Afterwards, on the basis of the degree of centrality, a typology of cities has been created, which distinguishes 5 types:

- A – a very high degree of centrality (1.00–0.71);
- B – a high degree of centrality (0.70–0.41);
- C – a medium degree of centrality (0.40–0.31);
- D – a low degree of centrality (0.30–0.11);
- E – lack of degree of centrality (<0.10), (Zuzańska-Żyśko E., 2012).

3. The Upper Silesian conurbation among Polish metropolitan centres

Since metropolises are a globalisation product, they must be defined and classified according to international standards. But these standards are usually conditioned by the specific features of the country and depend on formulated aims, namely: cognitive aims require exact criteria, while political aims assume a regional differentiation stimulated by the policies of shaping the settlement system in a given territory. Identification of centres and metropolitan areas in Poland has strong regional and political connotations.

Literature on the subject reveals that exogenous functions are metropolitan functions (supraregional, according to Christaller); that is, the services of the highest rank that belong to the 4th sector institutionalized by the following institutions: political, economic, financial, communication, educational, academic, cultural, and in particular, decisive institutions (institutions of regulation, management and control on an international scale). It shall be expressly stated that the factor that determines the metropolitan extent of a given function is, most of all, its range (the minimal range is national) and interrelationships with other metropolises (Markowski, Marszał, 2006).

Bassand M. (1997), focusing the discussion on the subject of metropolises in world literature, states that they are admittedly important due to their shape and structure; however, the most important factor is metropolisation itself due to the fact that world metropolises are changing as far as their shape and connections in the network of the global economy are concerned. Therefore, their metropolitan features will depend on their position in this network.

Attention shall be paid to the proposal by Soldatos P. (1987) listing 10 characteristic features of a world metropolis, namely:

- 1) it imports foreign production factors, such as: investments, goods and services as well as the workforce;
- 2) it hosts international companies, headquarters and branches of international businesses, banks and non-governmental, academic, educational institutions and universities with a noticeable participation of foreign students, and also diplomatic posts;
- 3) it exports production factors in the shape of: businesses, banks and other economic, academic, social and cultural institutions;
- 4) it is a part of the foreign transportation network (systems of motorways, rapid rail and international airports);
- 5) it intensifies infrastructure (international postal, telecommunication and tourism movement);
- 6) it develops the service sector for foreign customers: congress and exposition centres, luxurious hotels, international schools, high standard office buildings, international law firms, international centres and academic institutes;
- 7) it concentrates mass media of an international range (television, radio, press);
- 8) it organizes various types of international meetings: congresses, expositions, festivals, sports and arts events with the participation of foreign artists;
- 9) it houses national and regional institutions with an international brand, e.g. associations and clubs;
- 10) it practices paradiplomacy through public or private institutions and by the agency of its own representation in other foreign cities (membership in international organizations, Jałowiecki, 1999; Szymańska, 2009).

In Polish conditions, in the group of metropolises one can rank a city (an urban complex), which fulfils the following functional criteria:

- 1) population (minimum 0.5–1.0 million inhabitants);
- 2) economic potential with highly developed sector of high rank service;
- 3) academic potential (institutions of higher education and institutions of research and development);

- 4) metropolitan functions – “central” functions with at least national range;
- 5) junction in the network of transportation, organization and information connections;
- 6) stimulation of a global model of economy and management (Bassand, 1997; Szymańska, 2009).

Therefore, the definition of a metropolis includes both quantity and quality features, and the awareness of the fact should accompany all researchers of metropolisation issues, who frequently do not respect the regional scale of the studied “metropolis” and select metropolitan criteria. According to Jałowicki B. and Szczepański M. (2008), as a matter of fact, no Polish city, including Warsaw, fulfils the majority of the conditions and, in the case of Polish cities, the above mentioned criteria shall be relativised related to the nature of a settlement system as well as the level of economic development of the country, and should be used to analyse not yet the state, but the process of metropolisation.

With respect to the above view, Polish cities are only of a metropolitan nature, which they gain with the development of metropolitan functions. According to this degree of metropolisation, T. Markowski and T. Marszał (2006) proposed the following typology of Polish metropolitan centres:

- type A – Warsaw: accumulates exogenous functions of international importance and range, i.e. services classified in sector IV (administrative, political, financial, economic, cultural, educational, scientific, information, communication, especially those of decisive character (international administration, management and control), with a demographic potential of over 1.7 million;
- type B – Cracow, Tri-City; Cracow – in terms of metropolitan functions, it is a close match to Warsaw, and the functions are still being developed, especially academic, scientific and cultural ones; it is a main international tourism centre; and together with its integrated infrastructure, it has a population of about 1 million; Tri-City – with its streaked, spatial arrangement and population of about 1 million, it has many metropolitan functions (academic, scientific, cultural and is a tourism centre),
- type C – Wrocław, Poznań; Wrocław – about 0.8 mill. inhabitants, dynamically developing metropolitan functions and international connections (academic, scientific, cultural and as a sports

centre); Poznań – about 0.8 mill. inhabitants, dynamic development of metropolitan functions and international connections (scientific, academic, cultural and as a sports centre),

- type D – Łódź with its suburban zone – about 1 mill. inhabitants, highly developed academic, cultural and tourism functions,
- type E – the Upper-Silesian conurbation: huge demographic potential (about 3 mill. inhabitants), developed and complex settlement and urban arrangement, poorly developed metropolitan functions, apparent modernization processes, regeneration of degraded post-industrial areas.

Due to promotional and marketing endeavours, the term metropolis is abused, hence the hazard of depreciating metropolitan concepts into the group of metropolises. This creates inconsistencies in the definition.

The above hierarchy of Polish metropolitan centres shows that the Upper Silesian conurbation is only ranked as number 7, despite its complex settlement and urban system and a large demographic potential. It does not possess, however, distinct constitutive features, such as developed metropolitan functions and high quality urban space. Possibly, in the future, the Upper Silesian conurbation will become a “group of cities” characterized by division and complementarity of functions, and will develop a functional urban system. At present, it is still a group of cities which do not form a functional entirety. It is demonstrated by a slight degree of integrity in the sphere of spatial development, management, municipal services, and weak transportation networks. These cities compete with each other rather than cooperate.

The Upper Silesian conurbation has been, in a specific economic and social situation, created by the system transformation. Now, it is a decadent industrial region with traditional industry branches (mining, metallurgy and heavy chemical industry), a contaminated natural environment and a devastated settlement system, and; therefore, the space is of poor quality, which distances it from the group of future metropolises.

Admittedly, industrial regions (centres) under the influence of organizational and technological progress undergo functional and spatial transformations (deindustrialization – liquidation of heavy industry, reindustrialization – development of small

and medium enterprises, tertiarization of economy, globalisation – mergers of enterprises and integration of economy). After the reform of the system, in traditional regions, a multi-stage restructuring process was initiated, whose aim was to: decrease technological backwardness, increase the effectiveness of manufacture, make the economy international, improve the living standards of the population and the quality of the natural environment (Szajnowska-Wysocka, 2009; Tkocz, 2001). Revitalization of urban space is connected with the restructuring processes in their functional and spatial meaning. As a result of progressive restructuring and modernisation, several examples of post-mining revitalization may be pointed out in the Silesia region (in the area of a liquidated “Cleophas” (“Gottwald”) mine the Silesia City Center complex was built, and a housing estate (“Debowe Tarasy”) and office buildings (“Silesia Office Towers”) are under construction). At the same time, in the area of the former “Katowice” mine, a project of constructing a new Silesia Museum is taking place and also; there are also plans to locate there a Congress Centre, an Archdiocesan Museum and a housing estate (Szajnowska-Wysocka, 2008). The first signs of technological innovation are observed (the Technopark Gliwice and the Sosnowiec Science and Technology Park) as an origin of a technopolis in the Upper Silesian conurbation (Szajnowska-Wysocka, 2009).

The development possibilities of metropolitan centres depend on their potential generated by several types of capital, such as human and social, infrastructural, financial and environmental. In the case of the Upper Silesian conurbation, it is difficult to valorise even one of the mentioned capitals. Taking into account their resources, the inclination would be towards the demographic potential – over 3 million; however, its potential for stimulating the activation of metropolitan functions is not going to depend on the state of population, but on its human and social capital.

It is known that since the time of Aristotle, the middle class has been the class predestined to hold power and social dominance. Therefore, the idea of creating this class as a carrier of a country's development, the factor creating social capital, and the basis of political order and stability appeared in political programmes of post-socialist transformation. But it is very difficult to have a middle class in regions which

the civilizational mission of the socialist formation endeavoured to construct as industrial centres, where the mainstay was the working class. Their economic appreciation and prestige (the graduates of vocational schools), and depreciation of higher education, have deformed the social structure. The regions of Silesia, Walbrzych and Lodz are the best examples of such sociological processes. Especially in the Upper Silesian conurbation, where historical events caused that local elites (middle and upper class) were very modestly represented, the more so that some of them willingly or unwillingly converted their nationality. This is particularly visible in the Upper Silesian conurbation, according to B. Jałowiecki and M. Szczepański (2002), in such regions, in cities of real socialism, the creation and shaping of the middle class is going to be difficult, but possible in the long term, based on their intellectual, economic and academic potential. Here, Bassand's opinion (1997) may be recalled, according to which the process of metropolisation does not rely on the creation of large metropolises and shaping their world network, but on the transformation of the social structure of the metropolis itself, together with its infrastructure. Metropolisation shall contribute to the transformation of urban community (society).

4. An attempt to empower the Upper Silesian conurbation

The idea of empowering the Upper Silesian conurbation, that is creating an urban superstructure (“Silesia”), has a long history. As early as after World War II, the Upper Silesian Industrial Region presented itself as a prestigious industrial region in the country, but, due to their traditional industrial monoculture (mining and metallurgy), none of its cities formed metropolitan functions to compete with Cracow or Wrocław. Therefore, in the plans for the spatial development of the Śląskie Voivodship, there began to emerge various concepts of shaping the space of the Upper Silesia conurbation, e.g. a coherent “superstructure” or diversely “fragmenting” the conurbation into separate units. In the 1970s, a concept for the new GOP's centre based on a hexagonal transportation system was developed, but it was not implemented.

The post-socialist transformation, however, led not only to a change in the economic role of the region in the national economy, but also to democratization of social life, which allowed for growth of regional and local initiatives in the form of strategies, projects and scenarios of economic restructuring of the region. In the process of forming the new economic order (functional and spatial) of the region and its role in the newly shaping space of Poland in the beginning of the 21st century, its crisis situation is revealed. This region was the economic core in the territorial organization of the country at the turn of the 19th and 20th centuries. During the following turn of centuries (20th and 21st), however, a turn in the structure of Polish space took place, namely the Silesia region lost its status as a core area. What is more, it became peripheral, far beyond the reach of the new centre of Poland in the 21st century, which is shaped along the European Axis of Development in the 21st century: Paris – Berlin – Poznań – Warsaw – Minsk – Moscow (Szajnowska-Wysocka, 1999).

It was only access to the EU, that re-inspired activities aimed at the creation of a uniform, large urban system ("Silesia") from the Upper Silesian conurbation. The idea of local government members provided for the organization of the conurbation (a group of hierarchical cities with a common transportation network) managed by a "supramayor" but with the preservation of own distinct identity and functional structures of individual cities in default of an administrative and legal act. Such an attempt was made at the end of 2007, i.e. local governments of 14 cities registered an urban association, the Metropolitan Association of Upper Silesia (GZM), integrating 14 cities with county rights (Górnośląski..., 2008). According to the intentions of the initiators of uniting Upper-Silesian conurbation cities into a communal union, it will allow for the elimination of disadvantages resulting from the individual activities of separate cities, including: weak competitiveness in comparison to larger cities (e.g. Cracow or Wrocław), the consequences of heavy industry restructuring, and the functional structure and municipal property ownership structure.

The main statutory tasks of the GZM include:

- 1) a common development strategy for the cities of the union, in accordance with the act on spatial planning and development;

- 2) management of roads taken over by the GZM;
- 3) labour market activation in the cities of the GZM;
- 4) obtaining national and foreign financing (special purpose funds);
- 5) application for EU budget resources;
- 6) supporting the innovation of economic programs that increase the competitiveness of the cities;
- 7) cooperation with local governments and, local and regional communities, and national administration authorities.

This image was going to be changed by the idea of constituting the "Silesia" metropolis, which, after forming its metropolitan functions, would compete with national metropolises. Such an idea of "Silesia" was supported by local governments and the national government but there needed to be a relevant administrative and legal act which would enable the functioning of such a structure (Chmielewska, Szajnowska-Wysocka, 2010).

The constructive activity of the GZM shall mostly bring effects in the continuous improvement of conurbation management, enhancing economic activity of member cities as well as the common, integrated promotional actions. The Metropolitan Association of Upper Silesia, in its first stage of activity and in a multiple-stage process, prepared a document entitled "Promotional strategy of the Upper-Silesia and Zagłębie Metropolis Silesia", 2009, which showed the awareness of the need for unified management for the poly-centric group of cities. Then, due to the lack of the "metropolitan act", further dynamic actions were undertaken to prepare the "Strategy of Development for the Upper-Silesia and Zagłębie Metropolis Silesia up to 2025", 2010. This strategy, as a multiple-aspect task, is indispensable for coordinating the union of the GZM cities and, increasing actions towards a competitive position of the Upper-Silesian conurbation against other national agglomerations, and for aspiring to the category of the international range of metropolises.

5. Social perception of the "Silesia" undertaking

The idea of creating "Silesia" ever since the first information appeared in the mass media (2006), the

idea of creating “Silesia” has evoked strong emotions and released discussion, which has been publicized in the regional and national press. The first controversial issue became the name for this urban community, which is territorially delimited by the Metropolitan Association of Upper Silesia (GZM). According to public opinion, the name should be short and easy for foreigners, but it should be associated with the region. Among the proposed names of “Katowice”, “the Agglomeration of Upper Silesia”, “the Southern Conurbation”, “the Agglomeration of Silesia and Zagłębie”, the name “Silesia” was recognized as unambiguous and historically natural.

Further issues were the registered office of the “Silesia” authorities, their structure and source of financing. As for the office, a centrally located small city was suggested, i.e. Siemianowice Śląskie. The mentioned issues did not reduce historical antagonisms between Silesia and Zagłębie, especially on the part of Zagłębie.

Silesia is a historic region with a diverse identity that has been shaped since the Middle Ages. It has been under various administrative, political, economic and cultural systems due to the fact that, as a region abounding in mineral resources, it was the object of rivalry between several adjacent countries (Germany, Poland, and the Czech Republic). Therefore, its inhabitants have always been a mix that wanted to be united with its structures in order to be separate from areas located outside the Upper-Silesian region. That is why its inhabitants have always been mixed, and wanted to be united through a structure that would separate them from areas outside the Upper-Silesian region. The inhabitants of the historic region have created their own regional identity, detached from changeable national systems with diverse politics towards them (Bahlcke, 2011). Multiculturalism and the border location of Upper Silesia made the region open towards the inhabitants of the Southern Borderlands, who frequently settled in Upper Silesia after 1945 (Gliwice, Zabrze, Tychy); (Szajnowska-Wysocka, 2003, 2006).

The administratively and politically stable part of the coal basin, called Zagłębie, was, on the other hand, mostly inhabited by Polish people with Polish national identity. They have not been under the influence of different economic or cultural systems, nor have had to “shelter” in a diverse regional identity. For the purpose of distinctiveness, the north-

eastern part of the Upper-Silesian Industrial Region is traditionally referred to as Zagłębie, but it is not a historic region.

In the social debate over the “Silesia” undertaking, there are arguments for and against. The arguments for the creation of “Silesia”, presently institutionalized by the GZM association, may be grouped in the following manner:

- 1) the unification of cities will ensure their better future due to the fact that on the European arena of region competition at present, only large metropolises count, and cities of the conurbation may not compete with even with Polish metropolises, less the European ones;
- 2) the Upper Silesian conurbation is already an urban superstructure formed in the agglomeration process of heavy industry and, whose inhabitants take advantage of specialist functions (administrative, educational, academic, health, tourism, economic) of particular cities;
- 3) “Silesia” will make it possible to solve common problems. In a conurbation which is morphologically unified and functionally linked, many problems are shared, such as: transportation, water supply, roads, parks, green areas and promotional programmes (Szajnowska-Wysocka, 2011).

Arguments against “Silesia” are numerous and are subject to social reflection. Together with positive emotions, they form a profit and loss balance of such an undertaking:

- 1) the cities of the conurbation do not cooperate, but compete. Particular local governments do not understand the idea of metropolisation and examine the process in the category of individual profitability, regardless of common interests of the urban complex;
- 2) inhabitants are afraid of losing the autonomy of their cities. They do not understand the idea of a consolidation of cities against the massed tabloids with sensational slogans: the new city of “Silesia”, the mega city of “Silesia”, without the explanation that empowering “Silesia” serves the purpose of joint management and financing of the common technical and economic infrastructure;
- 3) Warsaw does not need competition – a large southern metropolis in terms of territory and population;

- 4) the inhabitants of Zagłębie are afraid of the dominant Silesia (the predominance of Silesian cities);
- 5) the Silesians and the Zagłębie people are not going to live in a joint city – the historic conflict has been emotionally revived.

Having analysed the above arguments, several conclusions may be drawn:

- 1) the arguments of “Silesia” supporters are rational. The cities of the conurbation should cooperate in order to solve common problems in a more effective way;
- 2) the arguments of “Silesia”-opponents are emotional and rational, and they are historically conditioned. These arguments express worries in relation to the idea of “uniting” the conurbation. What becomes apparent is the lack of good will to cooperate and competition for dominance, which disagrees with the idea as a whole (Szajnowska-Wysocka, 2011).

6. Research results: the metropolitan potential of the Upper Silesian Metropolitan Area (GOM)

At the stage of diagnosing metropolisation in the Silesian region, an attempt was made to monitor the institutional basis indispensable for creating metropolitan functions, which are a prerequisite for the creation of a metropolis that is to authenticate the metropolisation process and shape a metropolitan area. In order to achieve it, an attempt was made to delimit the Upper-Silesian Metropolitan Area (GOM) and to define its inner structure (Fig. 1) (Zuzańska-Żyśko, 2011). A metropolitan area may be differently delimited, depending on the criteria applied. Figure 1 presents according to the settlement criterion. The centre of the examined area was named as the central metropolitan group. It was singled out according to the administrative criterion of cities of the district rights, which create a uniform area. It is a group of 14 centres with the highest population and rank. These cities simultaneously create a voluntary municipal union named the

Metropolitan Association of Upper-Silesia (GZM). These cities create the core of the future metropolis. All the adjacent boroughs make the outer metropolitan zone. These are towns as well as rural boroughs. This zone was extended by 4 small towns that, due to their adjacent borders, make up a cohesive settlement area (the neighbourhood criterion). They are referred to as border towns.

The metropolitan potential of the GOM may, to some extent, be evaluated when analysing the frequency of occurrence of metropolitan features and the index of their centrality (Table 1). For this purpose, a hierarchy of cities (according to the degree of centrality) was used, which is reflected by the following typology:

- A – Katowice;
- B – Gliwice, Chorzów;
- C – Tychy, Sosnowiec, Zabrze;
- D – Ruda Śląska, Mysłowice, Bytom, Siemianowice Śląskie, Świętochłowice, Dąbrowa Górnicza, Piekary Śląskie, Tarnowskie Góry, Czeladź;
- E – Jaworzno, Bedzін, Mikołów.

Type A (Katowice) is characterized by the presence of all metropolitan features and simultaneous occurrence of well-developed metropolitan functions. The institutional base confirms the presence of advanced metropolisation processes in the city. Type B (Gliwice, Chorzów) agglomerates a significant group of institutions and services of national rank. This serves a complementary role for Katowice and participates in metropolisation through developed metropolitan functions. Type C (Tychy, Sosnowiec, Zabrze) represents cities where metropolitan functions are still being shaped. The institutional base represents selected services of national and international importance (Table 1). Poor metropolization processes, though, are observed in type D. Here, metropolitan institutions are sparsely represented. Simultaneously, the cities of Ruda Śląska, Mysłowice, Bytom, Siemianowice Śląskie, Świętochłowice, and Piekary Śląskie have a low degree of centrality. Type E (Jaworzno, Bedzін, Mikołów) does not participate in the process of metropolisation. Its institutional base is not developed and neither are its metropolitan functions.

The hierarchy and types of cities are presented in Fig. 2.

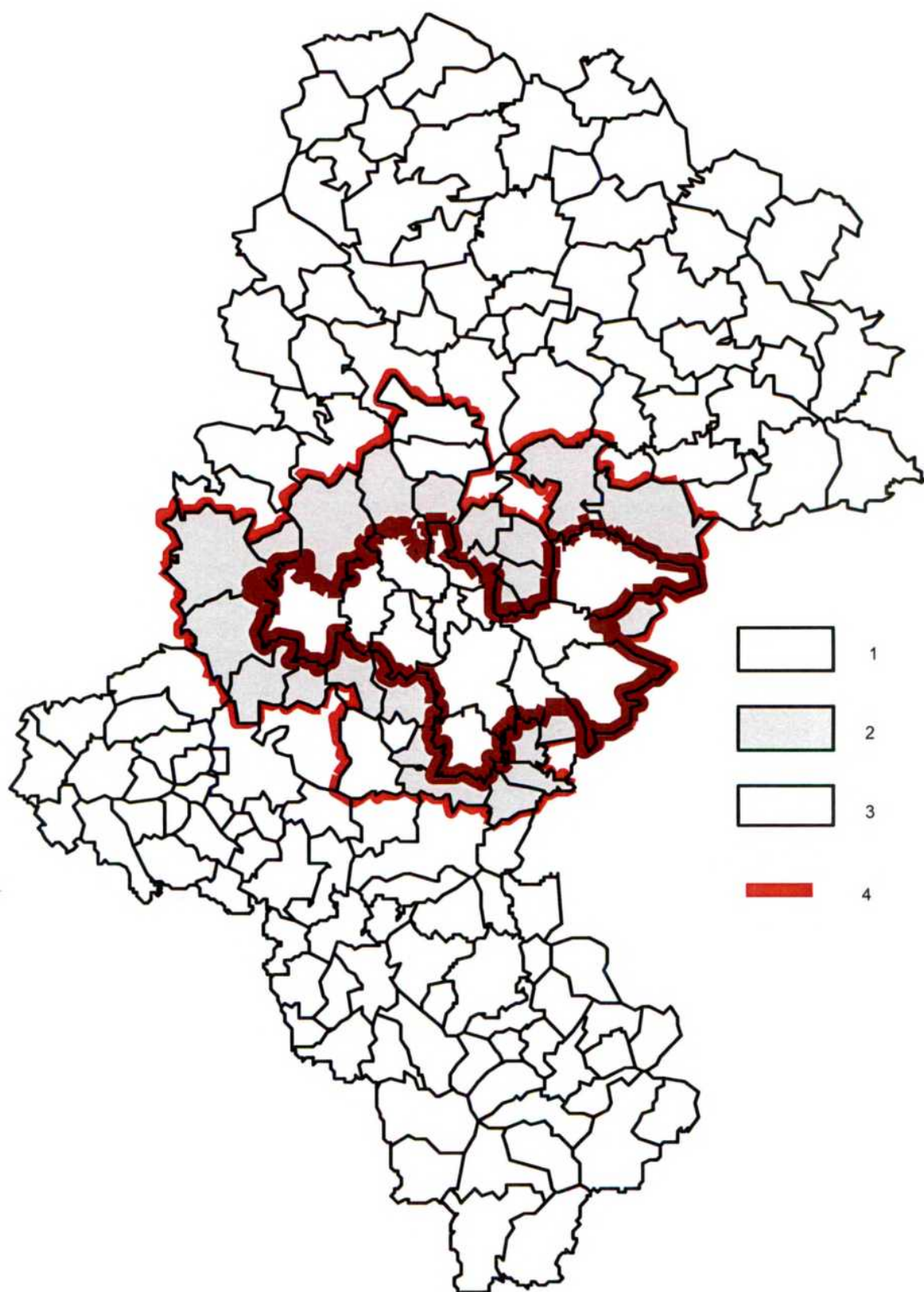


Fig. 1. The Range of the Upper-Silesian Metropolitan Area (administrative criterion)

Explanation: 1 – central metropolitan complex (core), 2 – external metropolitan zone, 3 – border towns of the external metropolitan zone, 4 – USMA's border

Source: Zuzńska-Żyśko E. (2012)

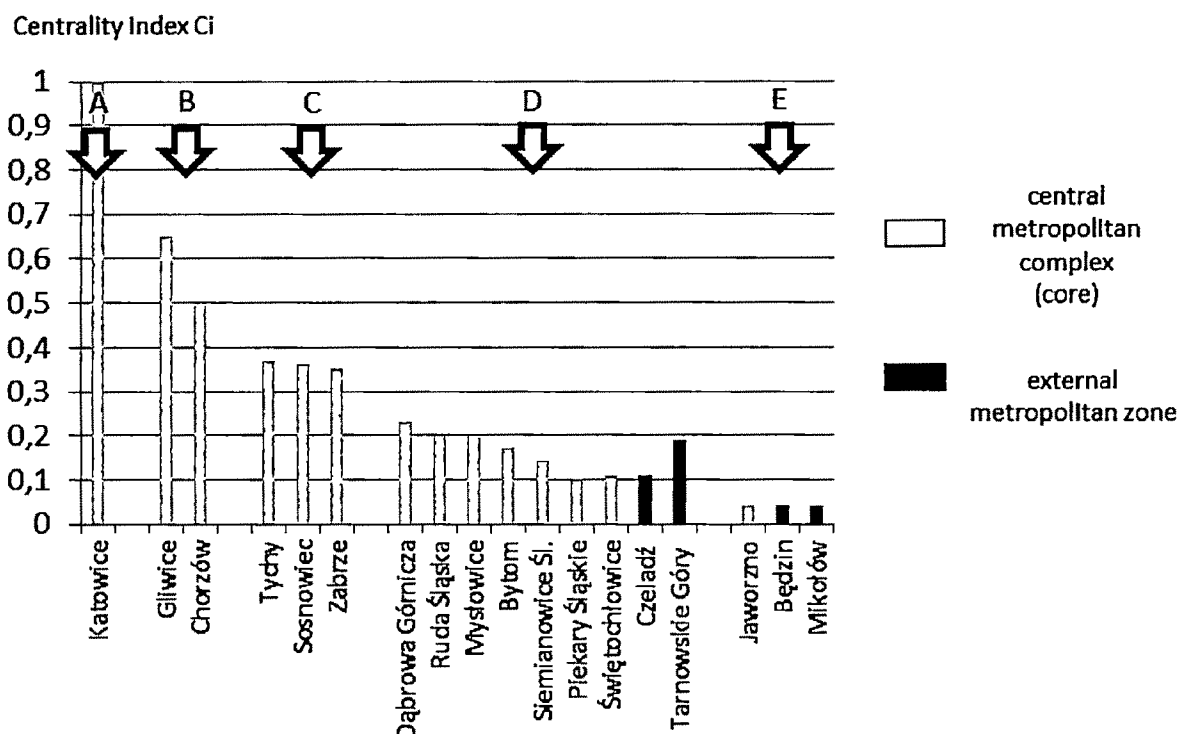


Fig. 2. The Hierarchy of Cities

Explanation: A, B, C, D, E – city types

Source: Author's own study

The above typology, complemented by the ranking of centrality of specific features, makes it possible to evaluate the metropolitan rank of features, and therefore their participation in the stimulation of the development of metropolitan functions (Table 1). As Table 1 shows, high centrality characterizes institutions such as: bank headquarters ($C_j=94$) and shops (salons) of exclusive clothing ($C_j=83$); in the examined area they are sparse since they are only present in 3 cities (Katowice, Gliwice and Sosnowiec). A similar degree of centrality characterizes international sports events (Katowice, Chorzów, Tychy). However, a medium level of centrality ($C_j=78-61$) is typical for the majority of features (embassies and consulates, technology parks, business incubators and innovation centres as well as high standard hotels, technology parks and cultural institutions), which are more common – they are present in 8 cities. Exclusive car showrooms, transport junctions and health institutions are placed much lower in the hierarchy of centrality.

The analysis of the upper right matrix box in Table 1 points out the expected regularity, i.e. the maximum and large number of examined features in the biggest cities, which is proportional to their position in the institutional hierarchy and vice versa (their lack in the left bottom matrix box, due to the fact that such institutions (supraregional) are still not existent in smaller GOM's centres). The monitoring of metropolitan features requires a thorough characteristics of the examined features in order to diagnose their metropolitan character, which has been done in a detailed study (Zuzńska-Żysko, 2012).

The ranking of the centrality of metropolitan features and the hierarchical typology reveal that a new phase of urbanisation in metropolisation is becoming apparent in the GOM in the form of the first supraregional institutions with a national range, which appeared in Katowice with Chorzów and Gliwice. Other cities to be mentioned are Tychy, Sosnowiec and Zabrze because they (together

with Gliwice and Chorzow) might become complementary centres in the future. Such a position in the settlement hierarchy is the conclusion of numerous functional and spatial studies of the cities (Klasik, 2008, 2009, 2010; Sobala-Gwosdz A, 2010; Petryszyn, 2011).

J. Petryszyn (2005), having examined the institutional base of centres at the district level in Poland, points out the fully developed district functions of the analysed centres.

The examined area has also been the subject of analysis of the scope of central functions by D. Sokołowski (2006), who defined regional sub-systems of central areas. The high centrality of Katowice, among other province capitals in Poland, confirms its intra-regional importance. In the examined area, research on regional foresight has been conducted (Bondaruk, 2011). The presented vision of the development of metropolitan public services in the Upper-Silesian Metropolitan Area refers to four theme aspects: transport, health services, culture and the environment management system. At the present, initial stage of metropolisation, it is difficult, or rather not recommended, to re-evaluate the scenarios of development. The progressive metropolisation of selected public services will verify them and establish further directions of development.

7. Conclusions

In conclusion, it is observed that:

- 1) In the atmosphere of a peculiar metropolitan renaissance, the term “metropolis” is abused, which is very relatively justified;
- 2) The use of the name: the common city (mega city) of “Silesia”, at the point of creation, had influenced the perception and debate on the idea of unifying 14 federal cities;
- 3) Lack of preparation of local governments with respect to methodological aspects, e.g. “a workshop on metropolisation” with academic researchers of this issue (Department of Settlement Geography and Regional Studies, Faculty of Earth Sciences, University of Silesia);
- 4) In the Upper-Silesian conurbation, symptoms of the metropolisation process are noticed in the

form of a small institution basis with suprar-regional character, which creates the basis for shaping metropolitan functions depending on their supraregional and international range;

- 5) On the basis of conducted research, it may be concluded that the Upper-Silesian conurbation is in its initial phase of the metropolisation process. This phase is fully reached only by the fully developed metropolitan functions of Katowice. The remaining institutional base of metropolitan importance is scattered in various cities, and its present state and range shows the first signs of the initial phase.

Notes

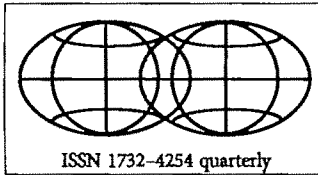
- (1) Shopping centers such as Plaza or M-1 have not been accounted for due to their commonness.

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A geographical perspective on the Aral Sea crisis: three interpretations of an image

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Abstract. The Aral Sea crisis has gained global notoriety as a human-induced environmental disaster. This paper contextualizes this crisis within a broad geographical framework. Three interpretations of a single photographic image emblematic of the desiccation of the Aral Sea are related to general foci within the academic discipline of geography. These interpretations serve to guide a framing of the Aral Sea crisis within a geographical context. This is presented as a geographical problem, incorporating elements and processes salient to physical geography, human geography, and human-environment interaction. With ecological and societal sustainability in the immediate Aral Sea region still a pressing concern, geographers are well positioned to contribute relevant, research-driven insights.

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1. Introduction

The Aral Sea crisis has attracted substantial global attention over the course of the past three decades. A wide range of academic and popular press accounts have documented the death, decline, desiccation, and near-disappearance of what was once the world's fourth-largest inland water body (see e.g. Micklin, 1988; Ellis, 1990; Spoor, 1998; Glantz, 1999; Bissell, 2003; Micklin, 2010). Readers of this journal are undoubtedly familiar with the Aral Sea case, particularly that of an unparalleled anthropogenic environmental disaster, for good reason. Geographers recognize in the Aral Sea crisis a salience that resonates across our discipline's numerous subfields. Broadly speaking, physical geographers, human geographers, and geographers specializing in the interrelationships between human society and the 'natural' biophysical environment can each identify Aral Sea-related research questions appropriate to the respective subfields. The multi- and cross-disciplinary nature of geography would also seem to ideally position our discipline to address the complex, multi-scale coupled nature of the region's human and environmental systems in the continuing evolution of the Aral Sea crisis.

The relevance of the Aral Sea crisis to geography (and perhaps more importantly the relevance of ge-

ography to the Aral Sea crisis) provides an ideal opportunity for a reconciliation of the case and the discipline. In pursuit of this objective, the purpose of this paper is to frame the Aral Sea crisis within a broad conceptualization of the discipline of geography. Three interpretations of a single photograph, related to three broad foci of the discipline of geography, will facilitate this framing. In the process, historical and contemporary developments in the Aral Sea region will be described. This paper proceeds, following this introduction, with an image made by the author during a recent (September, 2011) expedition to the Northern Aral Sea in Kazakhstan. The image will be used first to extract and expand upon three broad approaches to geographical research. Three interpretations of this photograph will then guide a framing of the Aral Sea crisis within a geographical context. The paper concludes with a brief summary followed by a hopeful call for renewed interest, on the part of geographers, in the Aral Sea crisis.

2. Method for framing the Aral Sea crisis

A single image, made by the author on the former seabed of the Northern Aral Sea near Ak Basty, Kazakhstan in September of 2011 (Photo 1) will serve as a vehicle through which the geographical framing will be guided.



Photo 1. A desert-bound maritime vessel on the former Aral Sea bottom near Ak Basty, Kazakhstan

Source: Photo by author, 8 September 2011

While this image is unique (in the sense that no others exist from that precise location at that exact time), others like it, of rusting ships in the desert, are numerous and have come to symbolize the Aral Sea crisis. Three interpretations of this photograph, one of ecological destruction, a second of socio-economic decline, and a third of interrelationships between the ecological and social conditions coincide with three broad, general, and traditional foci within the discipline of geography.

2.1. Physical geography

One interpretation of the above image might focus on the physical, environmental elements displayed. Blue sky, interspersed with cumuliform cloud cover, extends to the horizon. In similar fashion, a barren and seemingly lifeless, flat, and arid terrestrial landscape expands as far as can be seen. The dominant element in the photograph is a human element, in this case a Soviet research vessel (the *Otto Schmidt*) which seems dramatically out of place. Of course what is glaringly absent is the depth and volume of water necessary to support such a vessel. We might surmise from this that some drastic environmental change has taken place here, and further suppose that a very large body of water has disappeared. In such a scenario, a body of water of this size would have also provided habitat for a variety of flora and fauna species, and served to moderate the local and regional climate.

The above narrative focused primarily on the presence or curious absence of natural environmental features (elements of the atmosphere, hydrosphere, lithosphere, and biosphere) of the landscape in the above photograph. Physical geography concerns itself with these environmental elements, in particular their distribution on the earth's surface, their development, and the various interrelationships between them (McKnight, Hess, 2003).

2.2. Human geography

Another interpretation of the above image might focus on the human elements portrayed. As mentioned above, the *Otto Schmidt* dominates the photograph, sitting isolated and abandoned to de-

cay. As the ship continues its wasting, rust and windblown sand are likely to rob it of its remaining identity – soon enough its name will no longer be visible. The human endeavor to which the *Otto Schmidt* was dedicated is no longer necessary or even possible. Soviet research funding and infrastructure have disappeared with the USSR's collapse. Other ships in similar photographs are of fishing vessels, emblematic of the once vibrant industry so vital for the region's economy and well-being of local inhabitants. Regardless of their original purpose, scientific research, cargo, transportation, or fishing vessels now decaying in the desert have also come to symbolize regional socio-economic decline. One other human element in the above image is a set of automobile tire tracks located off the port side of the *Otto Schmidt* stern. Something about this ship, and others like it, has attracted visitors. One is not accustomed to seeing maritime vessels stranded in the desert, of course, and the uniqueness of this scene and whatever dramatic events conspired to shape it may now have produced attractive destinations.

This narrative has concentrated on human elements in the above photograph, and has touched on a variety of activities (scientific research, transportation, industry, political process, tourism). Human geography can be viewed as the study of the locations and distributions of such human activity on the surface of our planet, and often seeks explanations for the resultant spatial patterns (Rubenstein, 2008).

2.3. Human-environment tradition

A third interpretation of the above image could concern itself with the correlation between the apparent dramatic environmental change and the decaying maritime vessel. Whatever happened to produce this scene has had clear impacts on both the physical environment and the lonely human element (the *Otto Schmidt*). The spatial and temporal correlation of the physical and human elements suggests that their declining fates are closely linked. This sentiment has been articulated vividly by William S. Ellis, who described similar landscapes on the former Aral seabed in Uzbekistan.

“Some of the vessels have been cut up for scrap, but several dozen remain, some with anchor chains played out across the sand and some gutted of all but the wasp nests in the wheelhouses. Cast in heavy coats of rust, all smell of the death of the sea and of themselves” (Ellis, 1990: 84).

The above description has stressed the interconnections between the bio-physical (death of the sea) and the human (death of the ships), another broadly-defined focus of the discipline of geography. In an influential and widely circulated article, William Pattison (1964) identified the ‘Man-Land’ theme as one of four defining principles of geography. The Human-Environment interrelationship approach has also been included as one of the ‘five unifying themes of geography’ (Joint Committee on Geographic Education, 1984) and conceptually informs the more recent emergence of research investigating the coupling of human and natural environmental systems (e.g. Liu et al., 2007; Werner, McNamara, 2007; Helldén, 2008).

3. The Aral Sea crisis in geographical perspective

A single image, presented above, generated three interpretations regarding the landscape presented. These interpretations, in turn, were related to three broad disciplinary foci within geography. Using this framework as an organizational guide, the Aral Sea crisis can be effectively presented in a geographical perspective.

3.1. Environmental crisis

With respect to the natural, biophysical environment, what has transpired in the immediate Aral Sea region can be classified as an environmental disaster. Over the course of the past five decades, the Aral Sea has shrunk dramatically (Fig. 1).

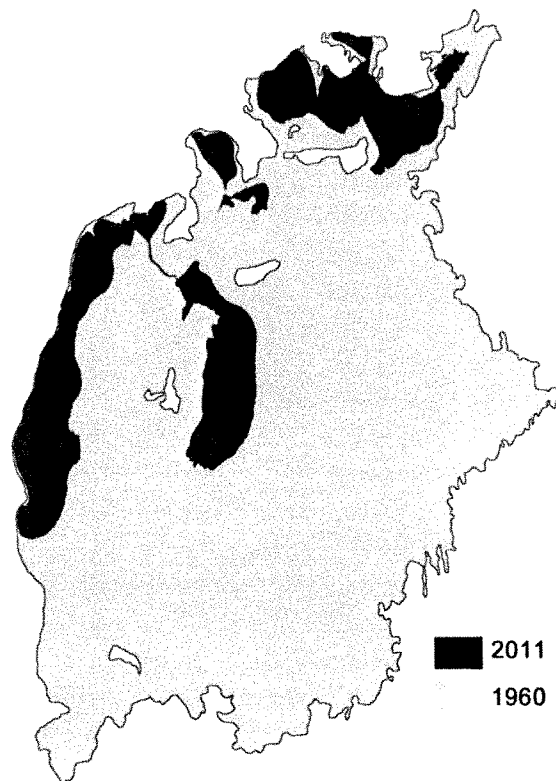


Fig. 1. Approximation of the extent of the Aral Sea in 1960 (lighter grey) and 2011 (darker grey)

Source: http://earthobservatory.nasa.gov/Features/World-OfChange/aral_sea.php?all=y, (Homepage of NASA Earth Observatory), DoA: 30 October 2012

The Aral's dramatic desiccation has formed, in the words of one expert, "one of the world's major environmental problem areas" (Spoor, 1998: 409). Others have called the crisis "one of the worst ecological disasters the world has seen" (Crighton et al., 2011: 125). In discussing global environmental change, Safford (2010) first cites the Aral Sea among important worldwide threats to sustainability. Situated in the arid border region between southwestern Kazakhstan and northwestern Uzbekistan, the Aral Sea is a terminal lake with no fluvial outflow. As such, its water balance is determined by the difference between inflow from the Syrdarya and Amudarya rivers and losses through net evaporation. Prior to 1960, this water balance was essentially in equilibrium, though since that time (Fig. 1) the Aral Sea has declined in surface area by 88 percent, water volume has declined by 92 percent, water level has dropped by 26 meters, and water salinity levels have risen by a factor of 20 in places (Micklin, 2010). Under such a scenario the debilitating impact on the Aral region's biodiversity stocks is not surprising. Habitat loss, both in the Aral and the delta regions of the Amudarya and Syrdarya, has decimated a variety of flora and fauna species. Escalating salinity has done the same for most of the Aral's fish species. In addition, dust storms carry salt-laden sediment from the former seabed across Eurasia. The Aral's climate moderation function seems to have also evaporated with its water. For instance, Small et al. (2001) document regionally warmer summers and cooler winters (by as much as 6 degrees C) since 1960.

3.2. Human crisis

Human populations living in the Aral's immediate region have also suffered disastrous consequences. Most of these impacts can be related to economic decline (including unemployment, poverty, loss of income opportunities) and to deteriorating health conditions. The former set of problems is most directly a function of the collapse of the Aral Sea fishery since the early 1960s. This fishery had become a vital source of income and employment for the communities around the Aral Sea, supporting a regional industry based on the harvest, processing, and export of fish. As the Aral receded, declining spawning habitat, increasing water salinity and ris-

ing contaminant concentrations contributed to the decline in the number and variety of fish. Not surprisingly, fish harvests in the Aral Sea also declined. In 1964, 41,120 tons of fish were harvested from the Aral. By 1974 this total had dropped to 15,500 tons, and by 1984 fish harvests on the Aral stood at zero (Kazakhstan Research Institute of Fisheries, 2011). Declining harvests proved disastrous for the fish processing centers of Aralsk, Kazakhstan and Moynaq, Uzbekistan. Estimates place the number of job losses at 60,000 (Micklin, 1988). During the final decade of the USSR, processing facilities in these two locations kept operating at a minimal level by processing frozen fish imported by rail from as far away as the Pacific Ocean (Kumar, 2002).

Contemporary health conditions among residents of the immediate Aral region have been described as constituting a serious "public health tragedy" (Crighton et al., 2011: 125). Much of this tragic circumstance can be attributed to the Aral's desiccation and the resulting ecological crisis. The collapse of the fishing industry on the Aral Sea has also led to unemployment, poverty, and the removal of an important source of dietary protein. Another important factor has been the collapse of the Soviet health care system and infrastructure that has particularly impacted rural areas like those surrounding the Aral Sea. Specific contributors to poor health conditions span a broad array of factors. The general salinization and mineralization of the former Aral seabed occurred with the recession and evaporation of the lake. Salts and minerals have also made their way into the region from upstream areas in the Amudarya and Syrdarya basins. In addition, agricultural chemicals (fertilizers, herbicides, pesticides, and defoliants) applied to cotton fields (and other crops to a lesser extent) have also flowed downstream and have concentrated in the immediate Aral region. For those living around the former Aral Sea, these substances persist in the water they drink, the food they eat, and the air they breathe. Drinking water in Uzbekistan's portion of the Aral region (the autonomous republic of Karakalpakstan) has been found to have elevated biological and chemical contaminants as well as high salt and mineral content (Small et al., 2003). The food supply in this area has also been responsible for elevated dioxin intake (Muntean et al., 2003). Frequent dust storms transport pesticide-laden particles through the air and

into the lungs of residents (O'Hara et al., 2000). The heightened incidence of health problems and diseases within the Aral Sea region is striking. A partial list includes tuberculosis, anemia, and a number of forms of cancer, hepatitis, kidney malfunction, diarrheal disease, respiratory disease, hypertension, and heart disease (Small et al., 2001).

3.3. Human-environment interaction

As the above sections have shown, the Aral Sea crisis is indeed an environmental and socio-economic crisis. A full understanding of the genesis of these crises, their evolution over the past five decades, and most recent amelioration efforts does not emerge, however, without investigating interrelationships between humans (society) and the natural environment (nature) in the Aral basin. This investigation might begin by examining the first decades of the USSR and the Soviet drive to expand cotton production within the Aral Sea basin. The Soviets were not the first to grow cotton here, though the scale of 'success' of this endeavor was unprecedented and eventually proved unsustainable – most certainly for the Aral Sea and those living around it. As part of what Grigoryev (1952: 170) termed the "Stalin plan to remodel nature," expansive irrigation networks were constructed along the Amudarya and Syrdarya basins. One of these canals, what is today the Karakum Canal in Turkmenistan, is the world's longest irrigation ditch and is the single largest diverter of water meant for the Aral Sea. The volume of water diverted for irrigation, much of which was lost to percolation and evaporation throughout the irrigated portion of the basin, soon resulted in an ongoing recession of the Aral Sea (Fig. 1). Other impacts included rising water tables, and water logged, salinized, and mineralized soils. During the Soviet period, cotton fields were heavily fertilized and doused with liberal applications of herbicides, pesticides, and defoliants. As discussed earlier, these poisonous substances have concentrated near the Aral Sea and negatively impacted the health of human populations and of the ecosystem. If measured strictly with respect to cotton output, the Soviet efforts in this regard were certainly successful. Soviet cotton production more than doubled between 1960 (slightly above 4 million tons) and 1988 (nearly 9

million tons) (Pomfret, 2002). Today, Uzbekistan and Turkmenistan remain among global leaders in cotton production and export, and the sector is an important source of income and employment in Kazakhstan, Tajikistan, and Kyrgyzstan.

While the 20th century nearly saw the disappearance of the Aral Sea, the first decade of the 21st century witnessed human action aimed at partially restoring one portion of it. During the late 1980s, the receding Aral had split into two separate bodies, the smaller northern Aral Sea (NAS) in Kazakhstan, and the larger southern Aral mainly in Uzbekistan. In 2005, a dam and dyke complex (sponsored by the World Bank and the government of Kazakhstan) was completed along the southern edge of the NAS to the southwest of the Syrdarya delta. Additional construction of a spillway and rechanneling of the lower reaches of the Syrdarya, combined with water containment capabilities of the 200 meter-long Kok Aral Dam and eight-mile dyke, have led to an increase in water level, volume, and surface area for the NAS. Environmental conditions in and around the northern Aral have also greatly improved. Decreasing water salinity (today at roughly 1960 levels) has resulted in the return of a number of previously exiled (into more suitable fresh water of the Syrdarya) fish species (Micklin, 2010). The return of fish has meant the return of the fishing industry, though on a smaller scale than what existed during the pre-1970s Soviet period. Since the completion of the dam and dyke, commercial fish harvests have increased on the NAS, from 695 tons in 2005 to 3,520 tons in 2011 (Kazakhstan Research Institute of Fisheries, 2011). The rebirth of the fishing industry in the NAS has engendered among local residents a sense of hope and anticipation of more prosperous economic conditions. As one fisherman put it, while standing on the shore of the NAS near Tastobek, Kazakhstan in September of 2011, "Yesterday, fishermen arrived by motorcycle. Today they arrive by Uaz (*Soviet produced 4x4 vehicle*). Tomorrow they will arrive by sport utility vehicle."

4. Conclusion

A single image (Photo 1), not unlike others of a decaying maritime vessel stranded in a desert land-

scape once the Aral seabed, yielded interpretations focusing on environmental elements, human elements, and the spatial and temporal correlation between phenomena of nature and of society. As these interpretations relate to three broad foci of geography (physical geography, human geography, and human-environment interaction) this photograph facilitated a geographical framing of the Aral Sea crisis. The Aral case has been described here as an environmental crisis featuring a desiccating lake, desertification, destruction of habitat, and regional climate change. The environmental disaster is also a human crisis, with local populations plagued by the collapse of the Aral fishing industry and a multitude of health problems. The situation here is also a clear case of human-environment interrelationships and interaction, with a largely anthropogenic genesis and negative reciprocal feedback harming both the biophysical environment and human populations. Most recently, during the first decade of the 21st century, human modification in the form of dam, dyke, and rechanneling infrastructure, has resulted in both environmental and socio-economic improvements in and around the NAS. Heralding the return of the Aral Sea, as some popular press accounts have done, is wholly inaccurate. While one small portion of the former grandeur of the Aral has been stabilized, the southern Aral continues its desiccating retreat. Surrounding areas in Uzbekistan's autonomous republic of Karakalpakstan remain mired in conditions of ecological and socio-economic disaster. Under these conditions and given the recent success of restoration efforts on the NAS, could similar human intervention yield similar success in the southern Aral? Technically speaking, such a scenario is possible (see southern Aral stabilization plan in Micklin, 2010), though in practice unlikely. Amudarya river water is a necessary input for two of the world's leading cotton producers and exporters (Uzbekistan and Turkmenistan). Sharp reductions in water withdrawals along this river seem unlikely. In addition, if current oil and gas exploration efforts are successful in Karakalpakstan's former seabed, the already miniscule political will on the part of Uzbekistan to restore the southern Aral would most likely evaporate completely.

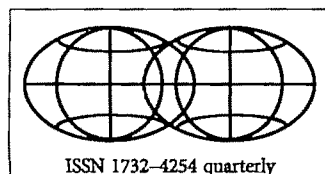
The Aral Sea crisis, as this paper has attempted to describe, is a geographical problem with opportunities for research across the broad spectrum

of geography. As most of the former Aral Sea region remains in ecological and socio-economic crisis, the urgency for global attention has not subsided. As the global community has reached a critical juncture with respect to environmental change, Stafford (2010) highlights the contemporary need for a broad interdisciplinary research approach bridging the gap between biophysical and human systems, in an effort to fully understand the interrelationships between those systems. The Aral Sea case is among the world's most pressing and dramatic instances of this interrelationship. Given the breadth and focus of our academic discipline, geographers are well positioned to be at the forefront of Aral Sea crisis research. This would appear also to be true for other similar anthropogenic environmental problems.

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